

Pantheon Report

Generated at 2018-02-27 08:06:54 (UTC).

Data path: India ppp0 (*remote*) → AWS India 1 Ethernet (*local*).

Repeated the test of 17 congestion control schemes 3 times.

Each test lasted for 30 seconds running 1 flow.

Increased UDP receive buffer to 16 MB (default) and 32 MB (max).

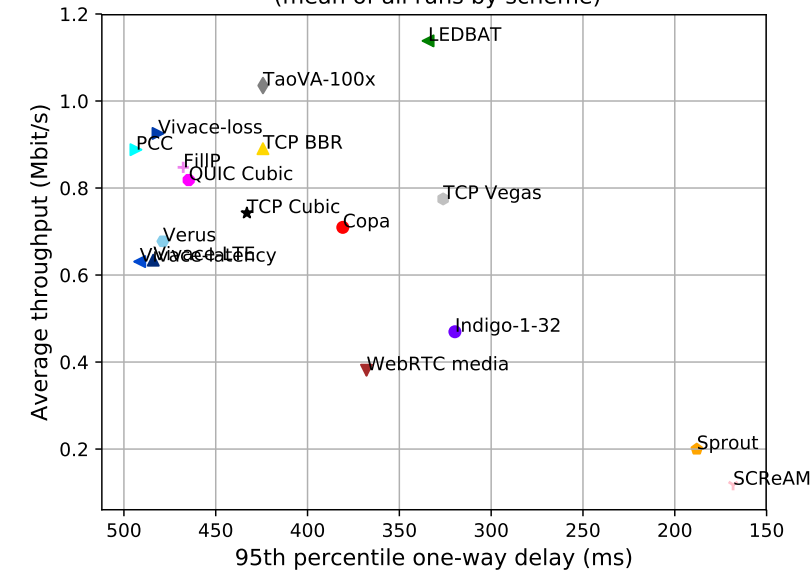
Tested BBR with qdisc of Fair Queuing (**fq**), and other schemes with the default Linux qdisc (**pfifo_fast**).

NTP offsets were measured against **nets.org.sg** and have been applied to correct the timestamps in logs.

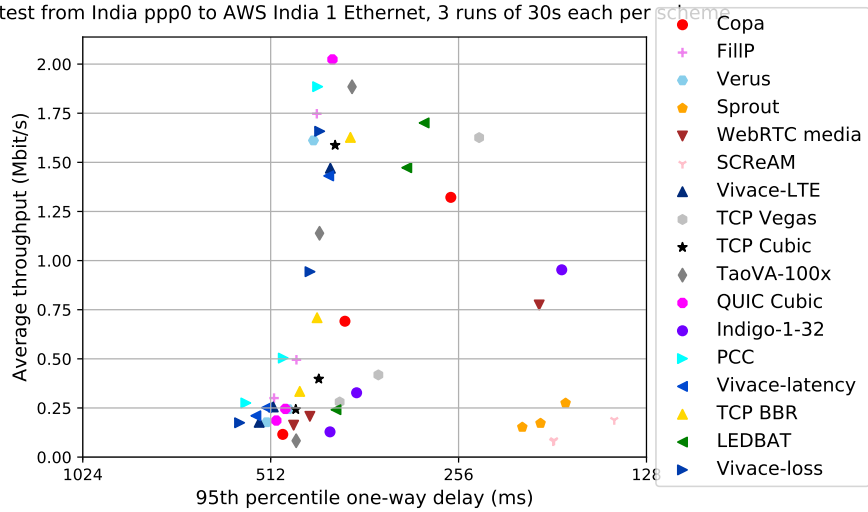
Git summary:

```
branch: master @ f12c42a2c63fdd9a862eefa0468859bf379b6623
third_party/calibrated_koho @ 3cb73c0d1c0322cdfae446ea37a522e53227db50
  M datagrump/sender.cc
third_party/fillp @ 828bbf95fd4941149b5cec90f281d1c69ae1a5c6
third_party/genericCC @ 9249eea3238475c4d8cca1443d28df70bff6c4a2
third_party/indigo @ a9b2060d39e4da2e8987e893e3eca2a6c7cd0ab9
third_party/indigo-1-layer-128-unit @ 3ae9e4ef4230db7484501f82ce8b377695f2f66d
third_party/indigo-1-layer-32-unit @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/indigo-1-layer-32-unit-no-calib @ 1f3a7f75b41135ed5b540c0fd3505939528e2a5f
third_party/indigo-no-calib @ 7224f2202e8a044d8306fa0b983ad84360c53d89
third_party/koho_cc @ f0f2e693303aee82ea808e6928eac4f1083a6681
  M datagrump/sender.cc
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/pantheon-tunnel @ fb1053193c2861da659ba9013db26744ccfcf993
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
  M receiver/src/buffer.h
  M receiver/src/core.cpp
  M sender/src/buffer.h
  M sender/src/core.cpp
third_party/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream @ c3370fd7bd17265a79aeb34e4016ad23f5965885
third_party/sourdough @ f1a14bffe749737437f61b1eae30b267cde681
third_party/sprout @ 6f2efe6e088d91066a9f023df375eee2665089ce
  M src/examples/cellsim.cc
  M src/examples/sproutbt2.cc
  M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
  M src/verus.hpp
  M tools/plot.py
third_party/vivace @ 7a4ba531e75b4a6f66f5c4580192120401784ce3
third_party/webrtc @ a488197ddd041ace68a42849b2540ad834825f42
```

test from India ppp0 to AWS India 1 Ethernet, 3 runs of 30s each per scheme
(mean of all runs by scheme)



test from India ppp0 to AWS India 1 Ethernet, 3 runs of 30s each per



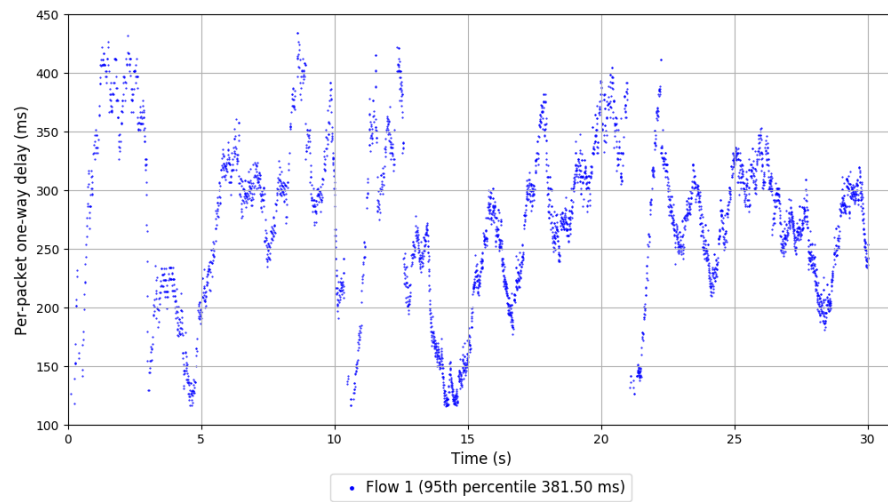
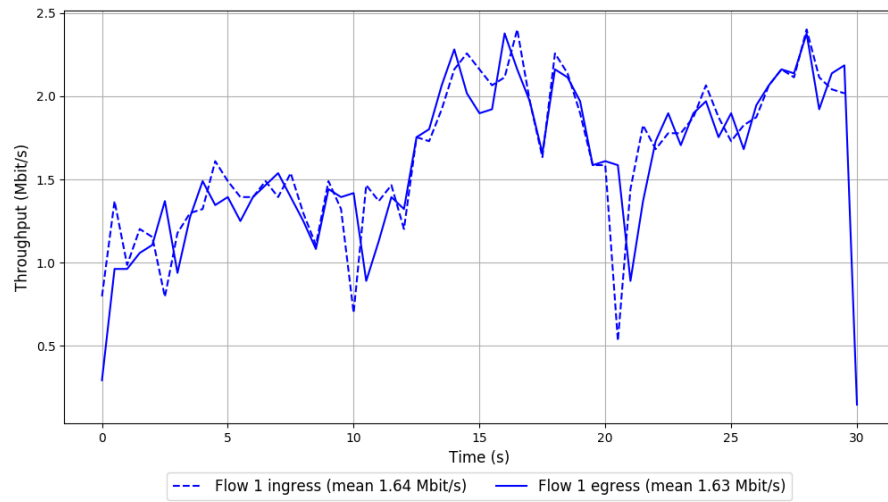
scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	3	0.89	424.28	6.77
TCP Cubic	3	0.74	433.04	6.88
LEDBAT	3	1.14	334.36	0.99
PCC	3	0.89	493.45	72.05
QUIC Cubic	3	0.82	464.71	21.54
SCReAM	3	0.12	168.24	0.43
WebRTC media	3	0.38	367.89	12.10
Sprout	3	0.20	188.03	1.13
TaoVA-100x	3	1.03	424.28	32.04
TCP Vegas	3	0.78	326.15	1.97
Verus	3	0.68	478.78	66.26
Copa	3	0.71	380.80	21.59
FillP	3	0.85	467.70	97.42
Indigo-1-32	3	0.47	319.74	7.83
Vivace-latency	3	0.63	491.41	58.16
Vivace-loss	3	0.92	481.42	44.69
Vivace-LTE	3	0.64	484.02	59.25

Run 1: Statistics of TCP BBR

Start at: 2018-02-27 06:14:42
End at: 2018-02-27 06:15:12
Local clock offset: -2.631 ms
Remote clock offset: -67.176 ms

Below is generated by plot.py at 2018-02-27 08:06:20
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.63 Mbit/s
95th percentile per-packet one-way delay: 381.499 ms
Loss rate: 1.32%
-- Flow 1:
Average throughput: 1.63 Mbit/s
95th percentile per-packet one-way delay: 381.499 ms
Loss rate: 1.32%

Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

Start at: 2018-02-27 06:34:31

End at: 2018-02-27 06:35:01

Local clock offset: -3.627 ms

Remote clock offset: -77.1 ms

Below is generated by plot.py at 2018-02-27 08:06:20

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.71 Mbit/s

95th percentile per-packet one-way delay: 431.438 ms

Loss rate: 5.68%

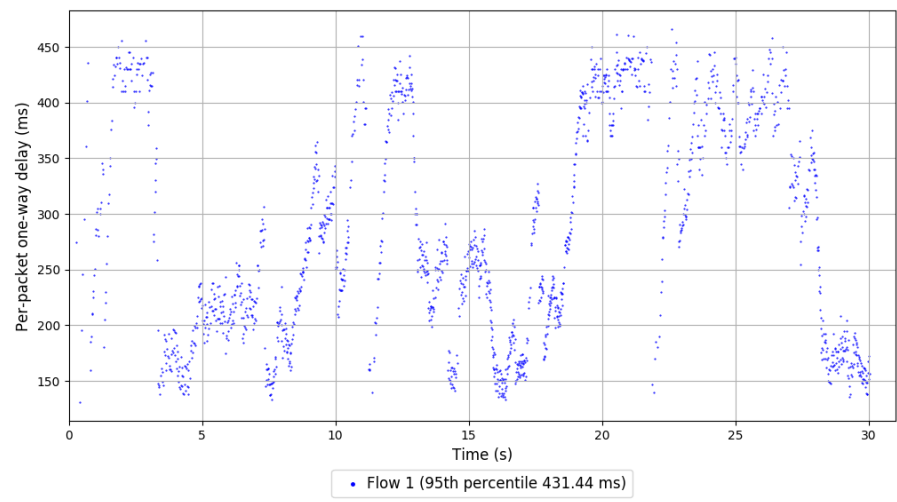
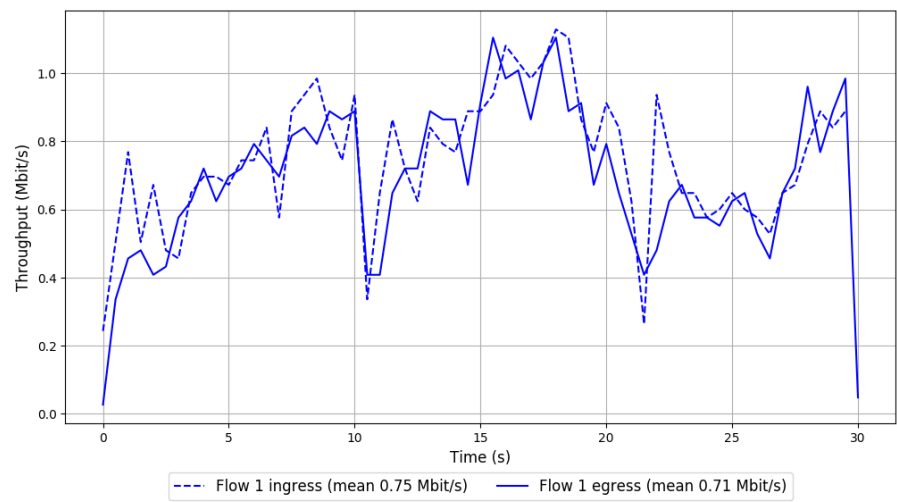
-- Flow 1:

Average throughput: 0.71 Mbit/s

95th percentile per-packet one-way delay: 431.438 ms

Loss rate: 5.68%

Run 2: Report of TCP BBR — Data Link

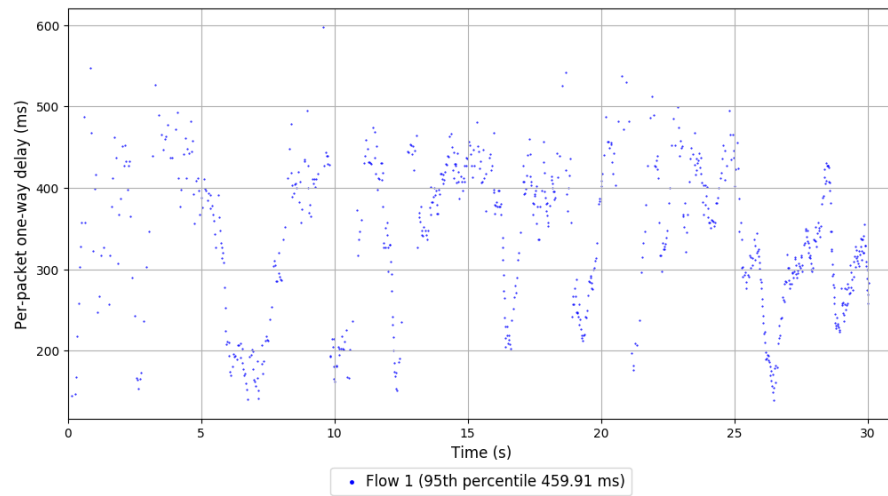
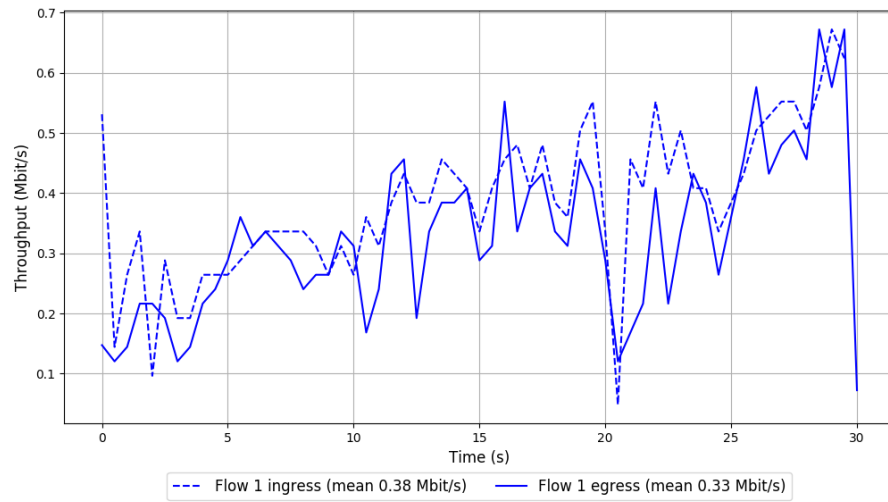


Run 3: Statistics of TCP BBR

Start at: 2018-02-27 06:54:15
End at: 2018-02-27 06:54:45
Local clock offset: -7.959 ms
Remote clock offset: -78.071 ms

Below is generated by plot.py at 2018-02-27 08:06:20
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.33 Mbit/s
95th percentile per-packet one-way delay: 459.911 ms
Loss rate: 13.32%
-- Flow 1:
Average throughput: 0.33 Mbit/s
95th percentile per-packet one-way delay: 459.911 ms
Loss rate: 13.32%

Run 3: Report of TCP BBR — Data Link

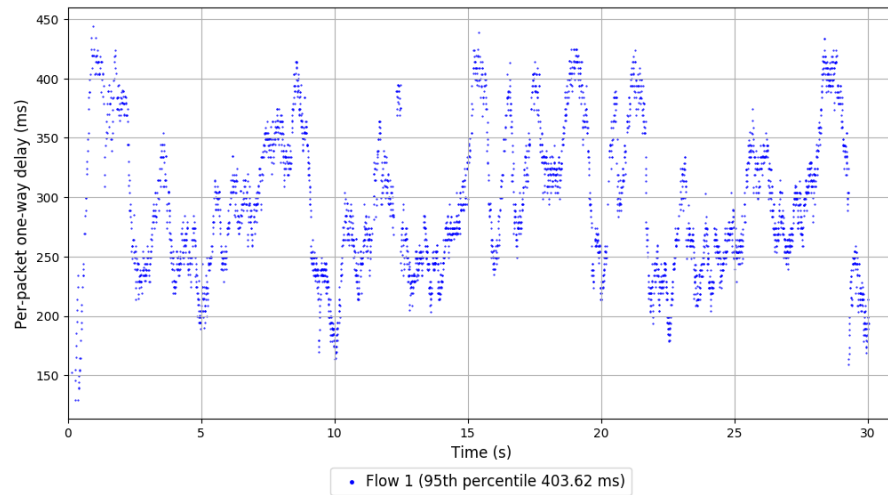
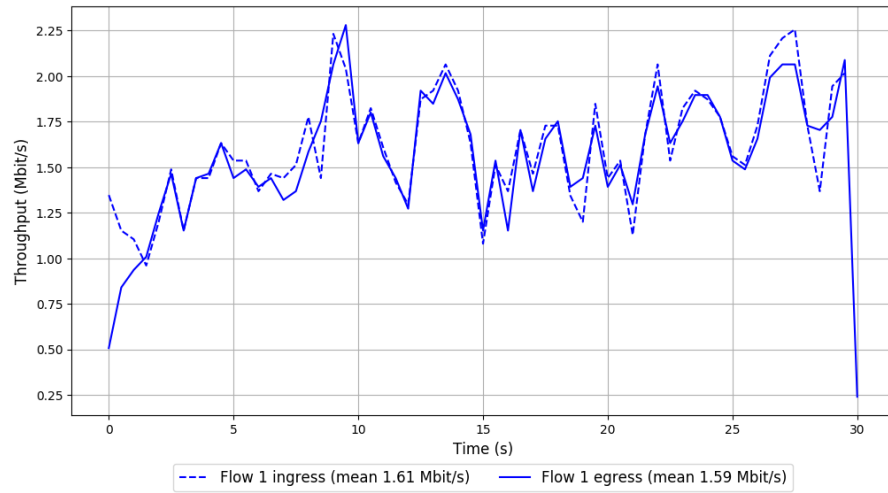


Run 1: Statistics of TCP Cubic

Start at: 2018-02-27 06:11:23
End at: 2018-02-27 06:11:53
Local clock offset: -3.692 ms
Remote clock offset: -74.445 ms

Below is generated by plot.py at 2018-02-27 08:06:20
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.59 Mbit/s
95th percentile per-packet one-way delay: 403.615 ms
Loss rate: 1.84%
-- Flow 1:
Average throughput: 1.59 Mbit/s
95th percentile per-packet one-way delay: 403.615 ms
Loss rate: 1.84%

Run 1: Report of TCP Cubic — Data Link

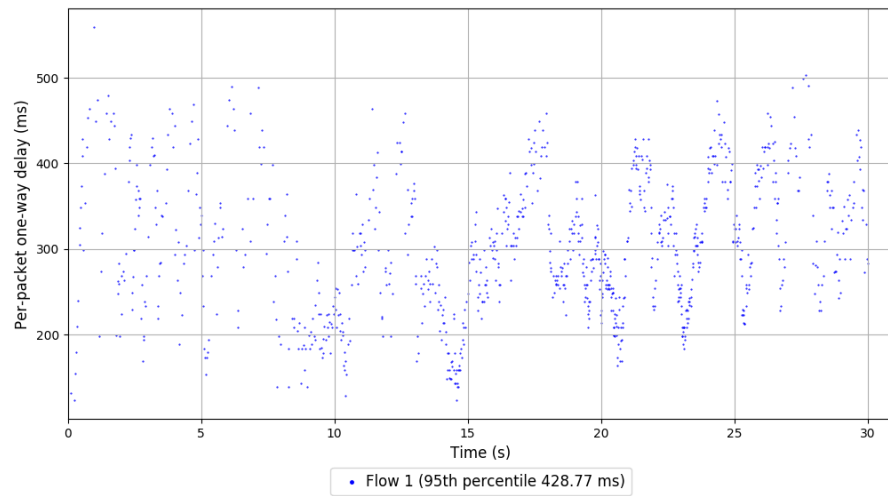
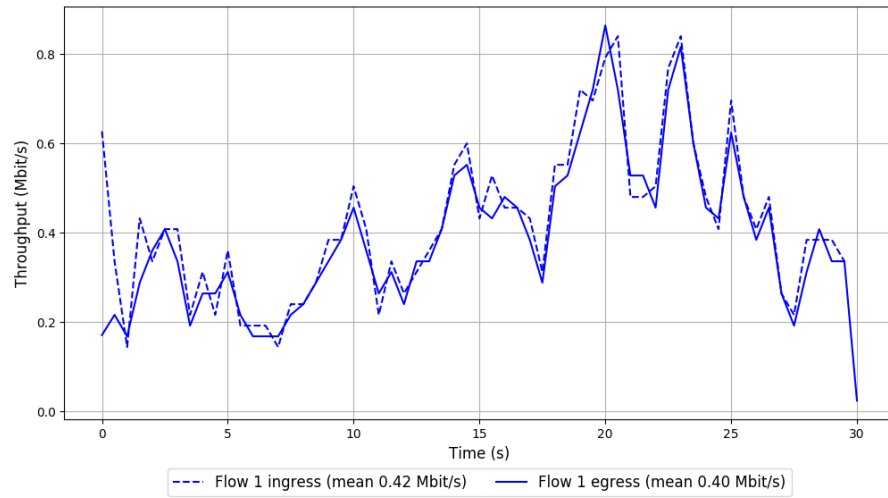


Run 2: Statistics of TCP Cubic

Start at: 2018-02-27 06:31:11
End at: 2018-02-27 06:31:41
Local clock offset: -5.863 ms
Remote clock offset: -66.142 ms

Below is generated by plot.py at 2018-02-27 08:06:20
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.40 Mbit/s
95th percentile per-packet one-way delay: 428.768 ms
Loss rate: 6.34%
-- Flow 1:
Average throughput: 0.40 Mbit/s
95th percentile per-packet one-way delay: 428.768 ms
Loss rate: 6.34%

Run 2: Report of TCP Cubic — Data Link

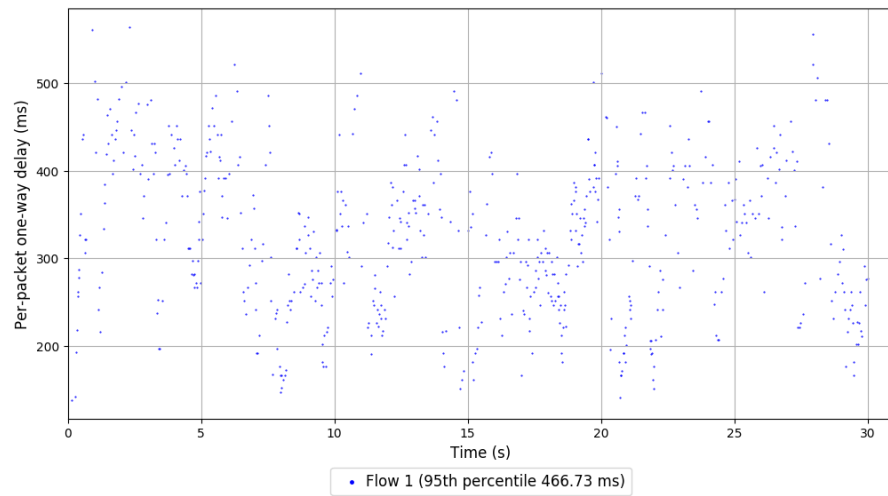
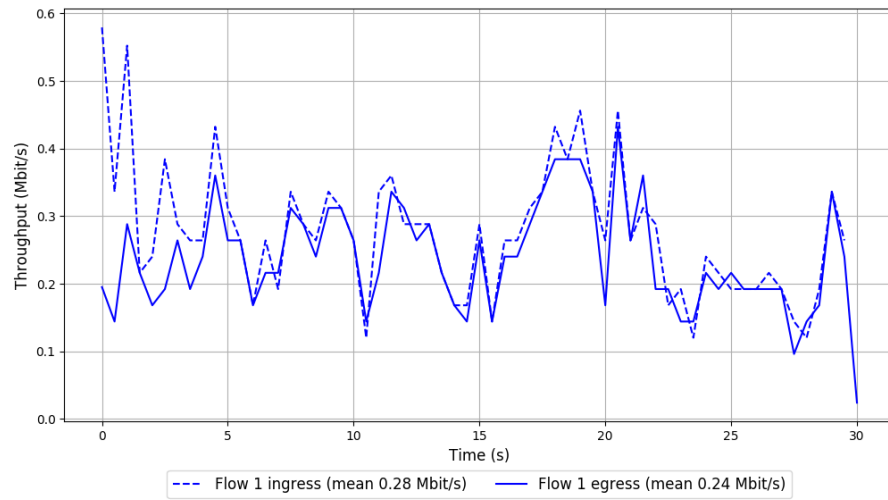


Run 3: Statistics of TCP Cubic

Start at: 2018-02-27 06:50:57
End at: 2018-02-27 06:51:27
Local clock offset: -3.574 ms
Remote clock offset: -77.14 ms

Below is generated by plot.py at 2018-02-27 08:06:20
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.24 Mbit/s
95th percentile per-packet one-way delay: 466.733 ms
Loss rate: 12.46%
-- Flow 1:
Average throughput: 0.24 Mbit/s
95th percentile per-packet one-way delay: 466.733 ms
Loss rate: 12.46%

Run 3: Report of TCP Cubic — Data Link

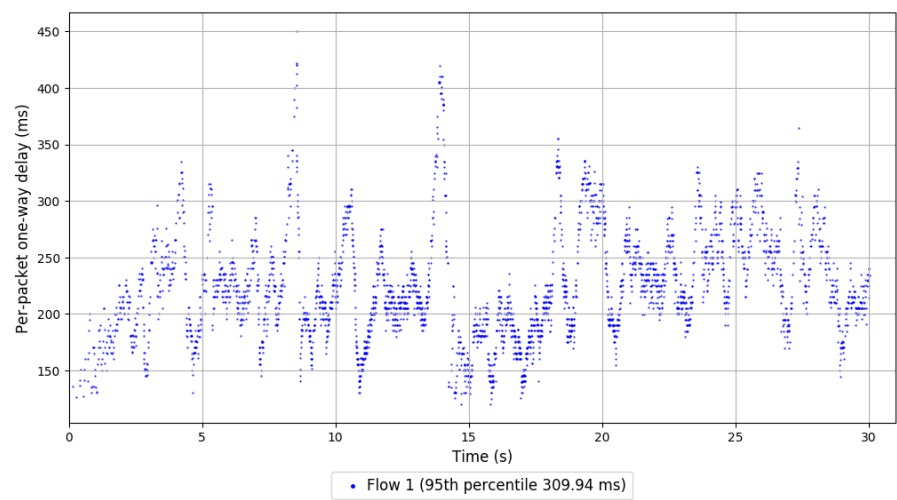
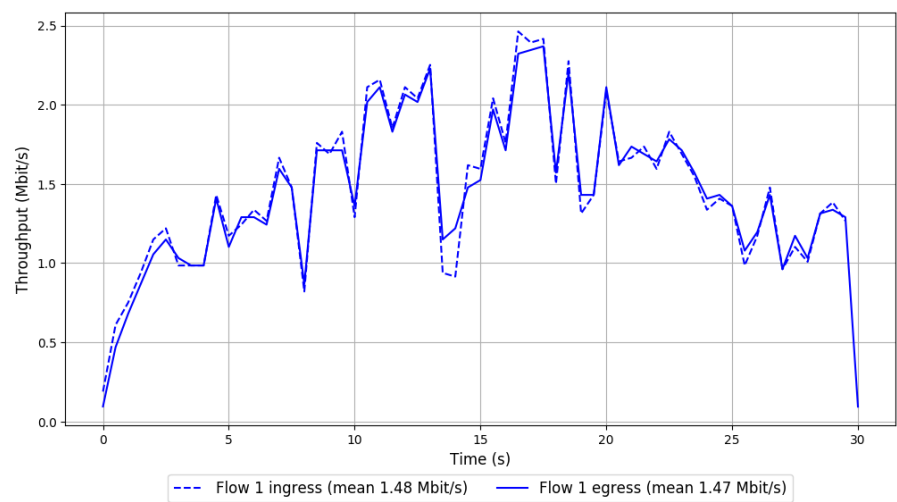


```
Run 1: Statistics of LEDBAT

Start at: 2018-02-27 06:09:10
End at: 2018-02-27 06:09:40
Local clock offset: -3.675 ms
Remote clock offset: -64.949 ms

# Below is generated by plot.py at 2018-02-27 08:06:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.47 Mbit/s
95th percentile per-packet one-way delay: 309.945 ms
Loss rate: 0.56%
-- Flow 1:
Average throughput: 1.47 Mbit/s
95th percentile per-packet one-way delay: 309.945 ms
Loss rate: 0.56%
```


Run 1: Report of LEDBAT — Data Link

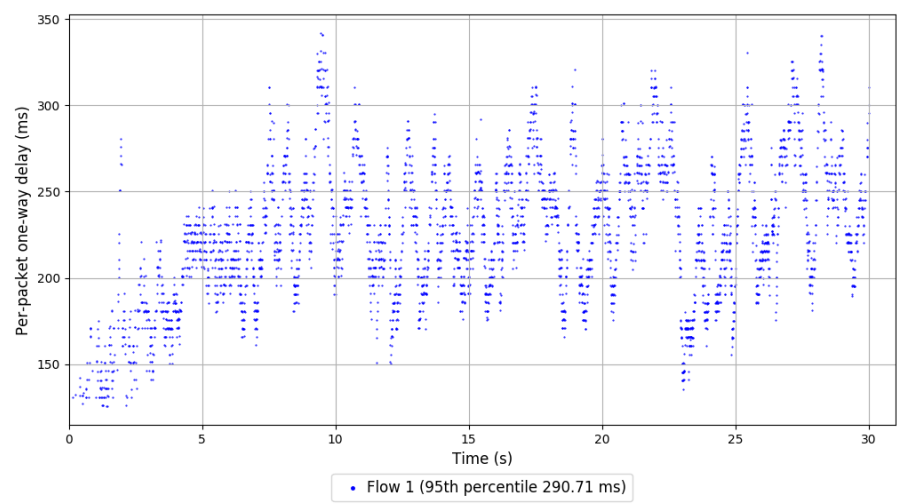
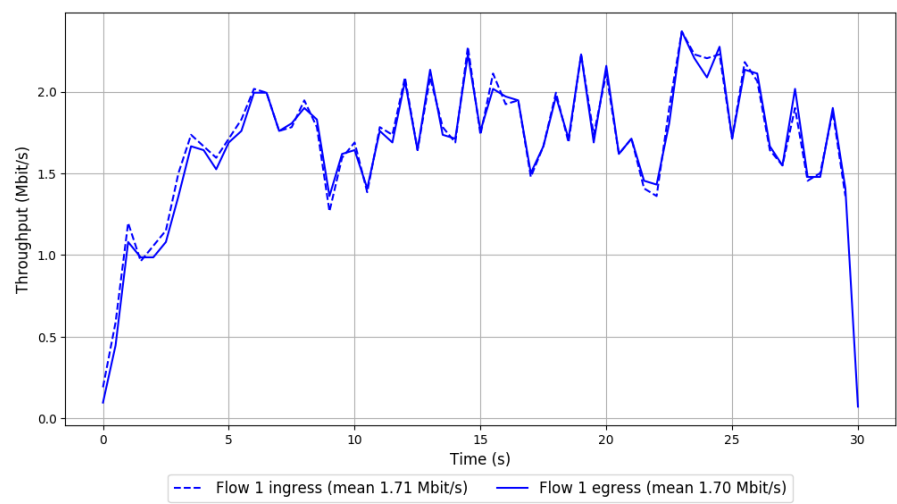


Run 2: Statistics of LEDBAT

Start at: 2018-02-27 06:29:00
End at: 2018-02-27 06:29:30
Local clock offset: -9.57 ms
Remote clock offset: -80.936 ms

Below is generated by plot.py at 2018-02-27 08:06:21
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.70 Mbit/s
95th percentile per-packet one-way delay: 290.709 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 1.70 Mbit/s
95th percentile per-packet one-way delay: 290.709 ms
Loss rate: 0.66%

Run 2: Report of LEDBAT — Data Link

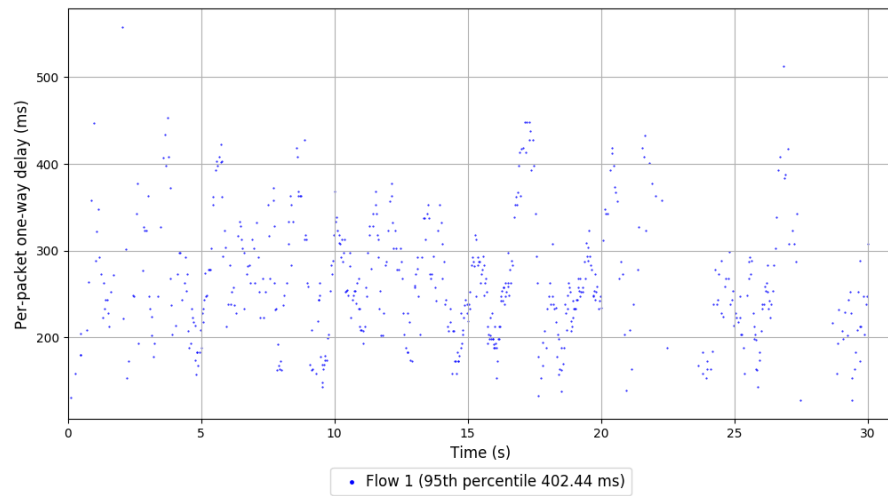
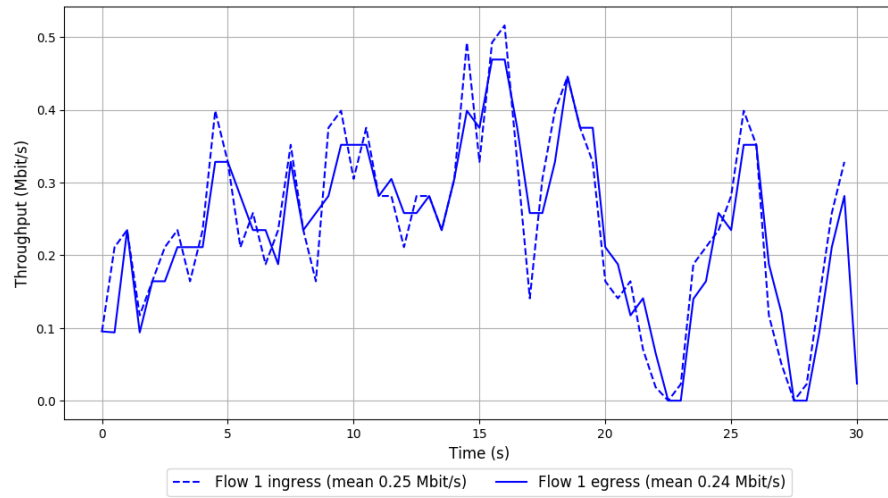


Run 3: Statistics of LEDBAT

Start at: 2018-02-27 06:48:45
End at: 2018-02-27 06:49:15
Local clock offset: -6.761 ms
Remote clock offset: -67.391 ms

Below is generated by plot.py at 2018-02-27 08:06:21
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.24 Mbit/s
95th percentile per-packet one-way delay: 402.437 ms
Loss rate: 1.76%
-- Flow 1:
Average throughput: 0.24 Mbit/s
95th percentile per-packet one-way delay: 402.437 ms
Loss rate: 1.76%

Run 3: Report of LEDBAT — Data Link

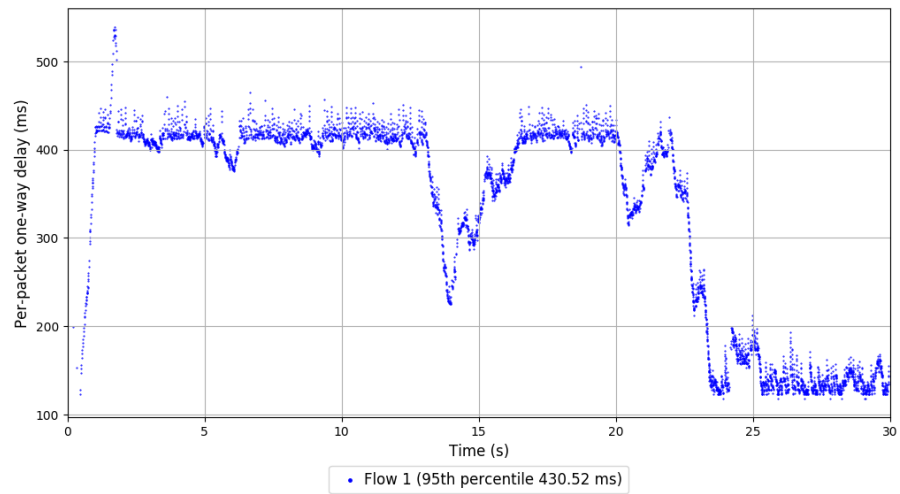
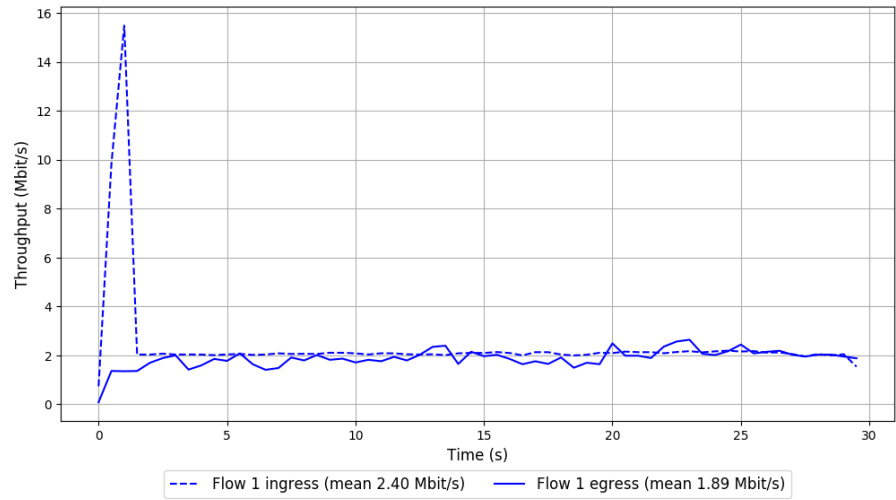


Run 1: Statistics of PCC

Start at: 2018-02-27 06:19:06
End at: 2018-02-27 06:19:37
Local clock offset: -3.04 ms
Remote clock offset: -73.87 ms

Below is generated by plot.py at 2018-02-27 08:06:24
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.89 Mbit/s
95th percentile per-packet one-way delay: 430.518 ms
Loss rate: 21.87%
-- Flow 1:
Average throughput: 1.89 Mbit/s
95th percentile per-packet one-way delay: 430.518 ms
Loss rate: 21.87%

Run 1: Report of PCC — Data Link

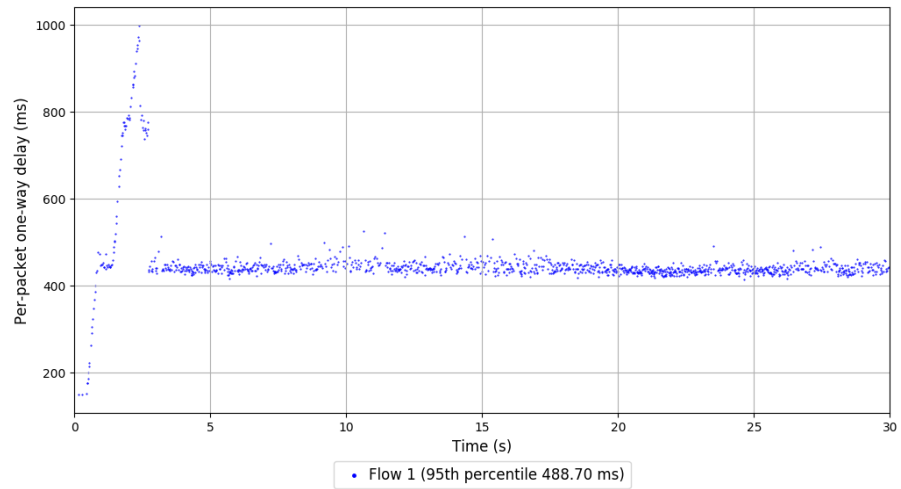
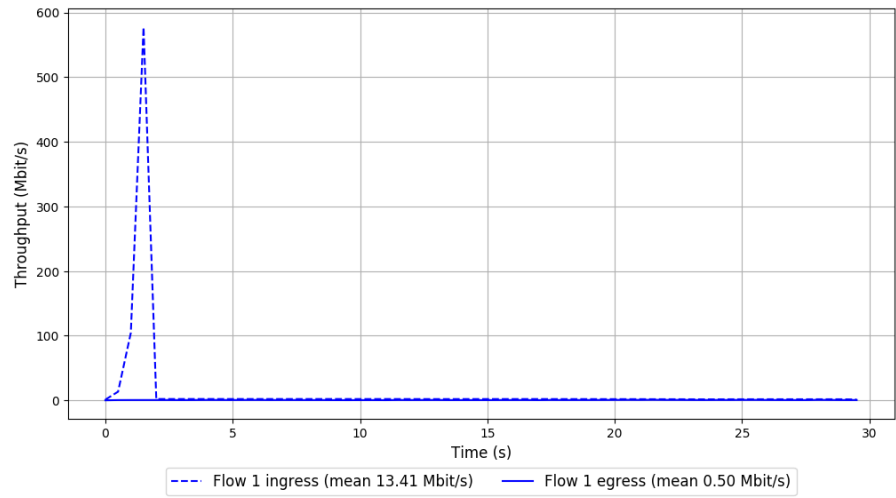


Run 2: Statistics of PCC

Start at: 2018-02-27 06:38:55
End at: 2018-02-27 06:39:25
Local clock offset: -4.389 ms
Remote clock offset: -77.526 ms

Below is generated by plot.py at 2018-02-27 08:06:31
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.50 Mbit/s
95th percentile per-packet one-way delay: 488.696 ms
Loss rate: 96.25%
-- Flow 1:
Average throughput: 0.50 Mbit/s
95th percentile per-packet one-way delay: 488.696 ms
Loss rate: 96.25%

Run 2: Report of PCC — Data Link

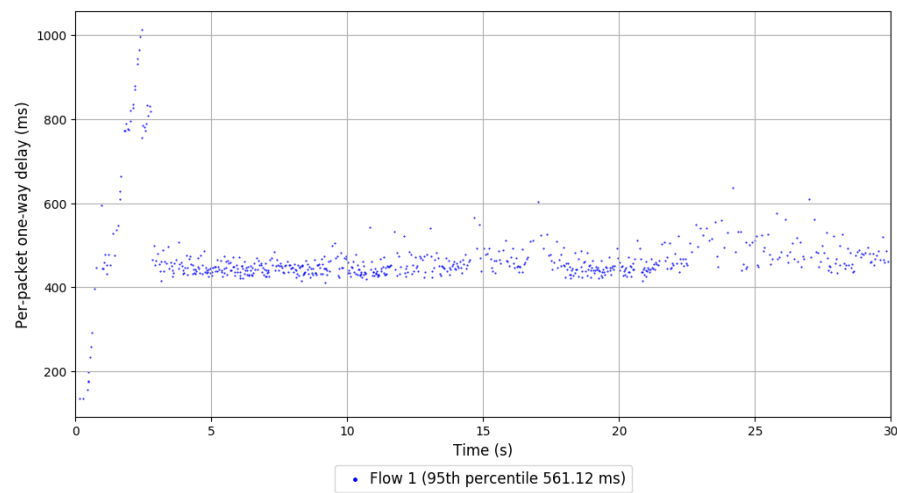
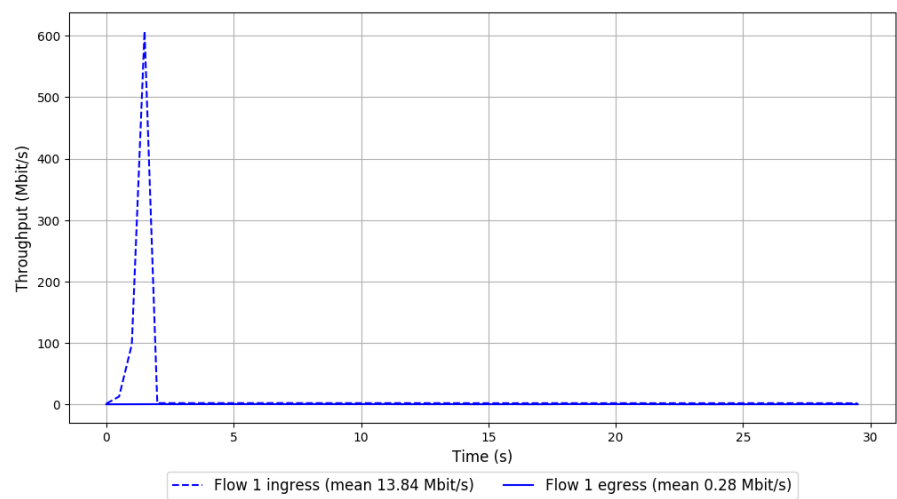


Run 3: Statistics of PCC

Start at: 2018-02-27 06:58:37
End at: 2018-02-27 06:59:07
Local clock offset: -7.476 ms
Remote clock offset: -76.842 ms

Below is generated by plot.py at 2018-02-27 08:06:33
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.28 Mbit/s
95th percentile per-packet one-way delay: 561.123 ms
Loss rate: 98.02%
-- Flow 1:
Average throughput: 0.28 Mbit/s
95th percentile per-packet one-way delay: 561.123 ms
Loss rate: 98.02%

Run 3: Report of PCC — Data Link

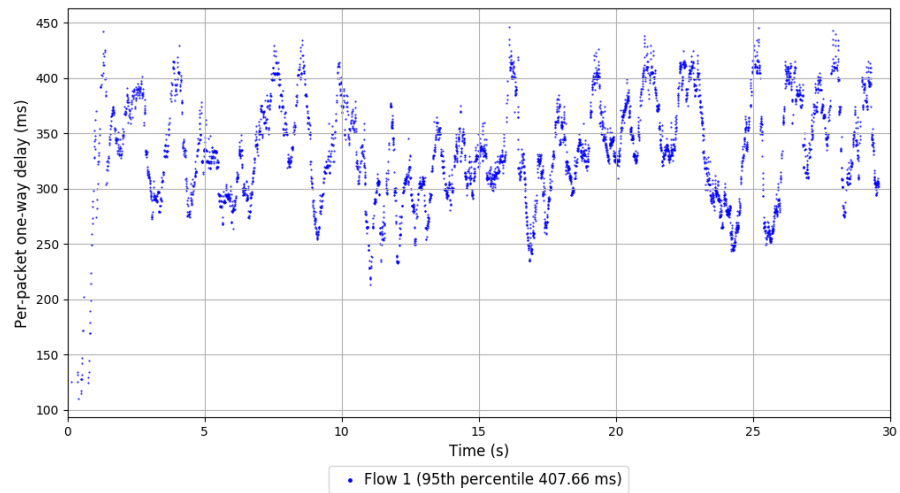
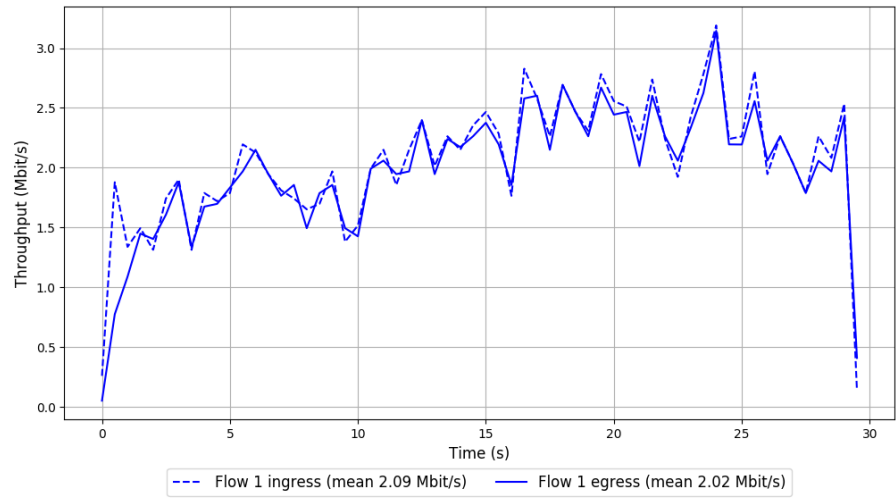


Run 1: Statistics of QUIC Cubic

Start at: 2018-02-27 06:18:00
End at: 2018-02-27 06:18:30
Local clock offset: -4.215 ms
Remote clock offset: -67.457 ms

Below is generated by plot.py at 2018-02-27 08:06:33
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.02 Mbit/s
95th percentile per-packet one-way delay: 407.658 ms
Loss rate: 3.25%
-- Flow 1:
Average throughput: 2.02 Mbit/s
95th percentile per-packet one-way delay: 407.658 ms
Loss rate: 3.25%

Run 1: Report of QUIC Cubic — Data Link

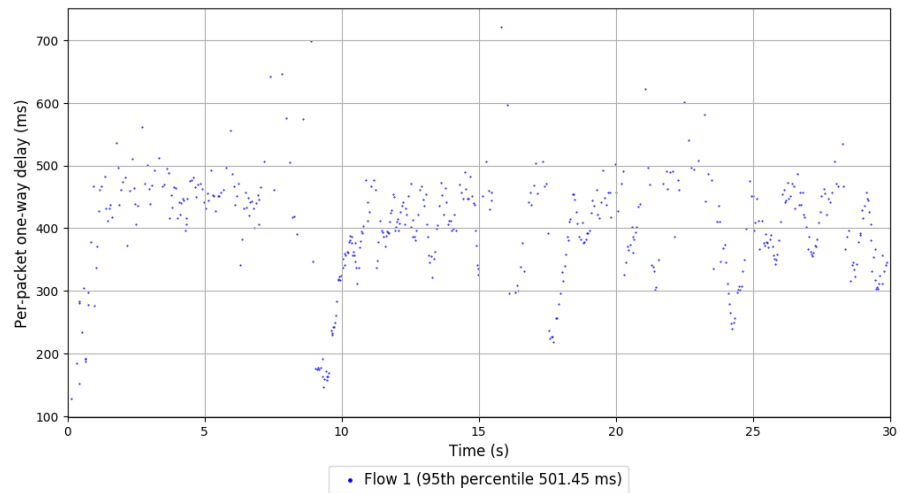
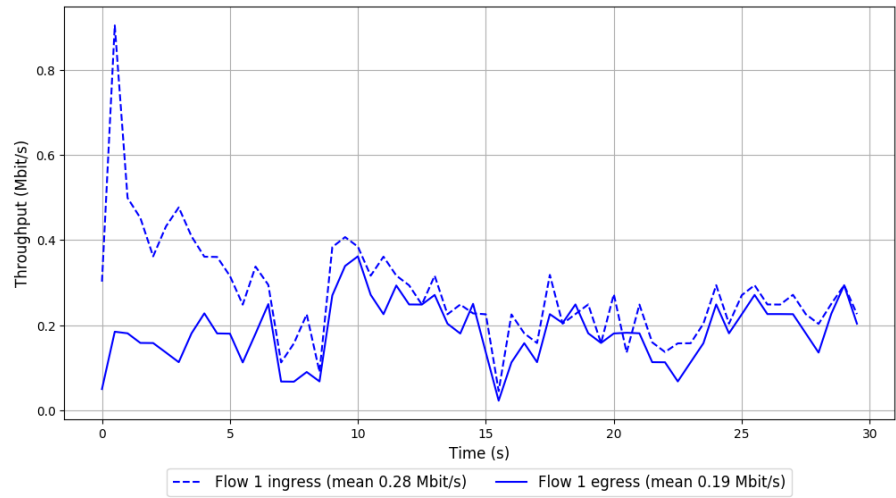


Run 2: Statistics of QUIC Cubic

Start at: 2018-02-27 06:37:48
End at: 2018-02-27 06:38:18
Local clock offset: -4.362 ms
Remote clock offset: -67.289 ms

Below is generated by plot.py at 2018-02-27 08:06:33
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 501.449 ms
Loss rate: 33.20%
-- Flow 1:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 501.449 ms
Loss rate: 33.20%

Run 2: Report of QUIC Cubic — Data Link

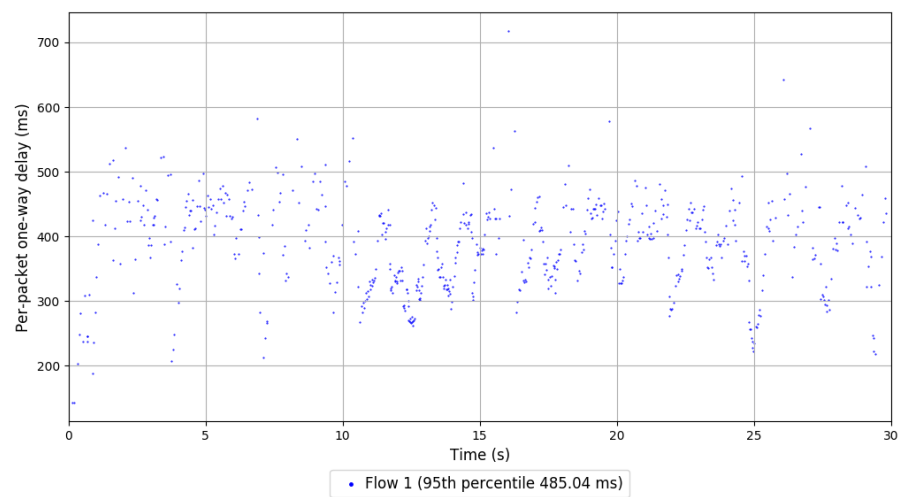
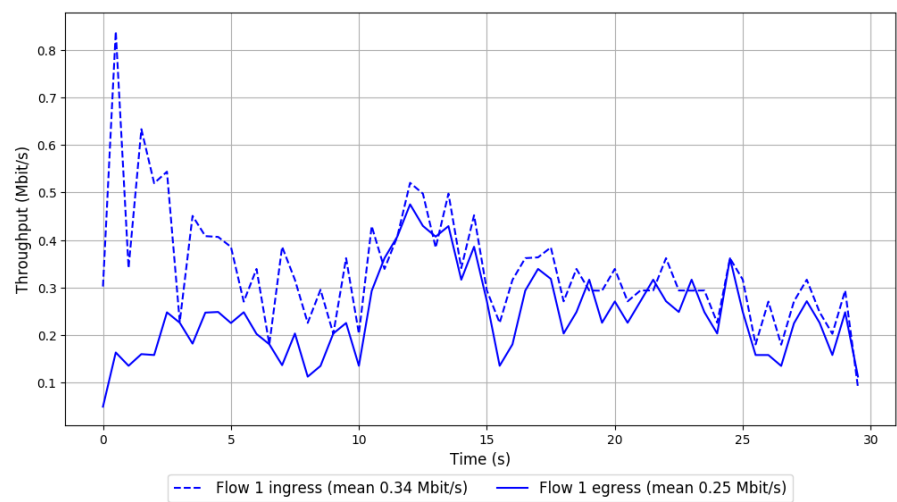


Run 3: Statistics of QUIC Cubic

Start at: 2018-02-27 06:57:32
End at: 2018-02-27 06:58:02
Local clock offset: -7.14 ms
Remote clock offset: -69.456 ms

Below is generated by plot.py at 2018-02-27 08:06:33
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.25 Mbit/s
95th percentile per-packet one-way delay: 485.037 ms
Loss rate: 28.16%
-- Flow 1:
Average throughput: 0.25 Mbit/s
95th percentile per-packet one-way delay: 485.037 ms
Loss rate: 28.16%

Run 3: Report of QUIC Cubic — Data Link

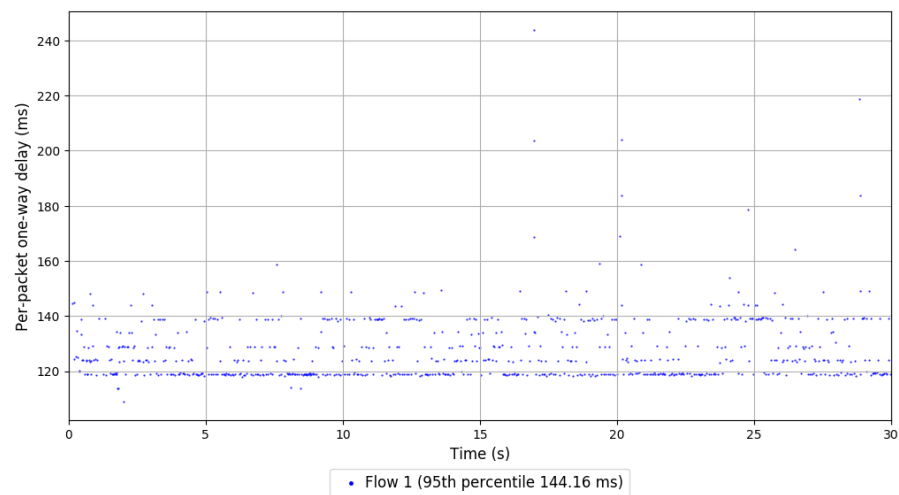
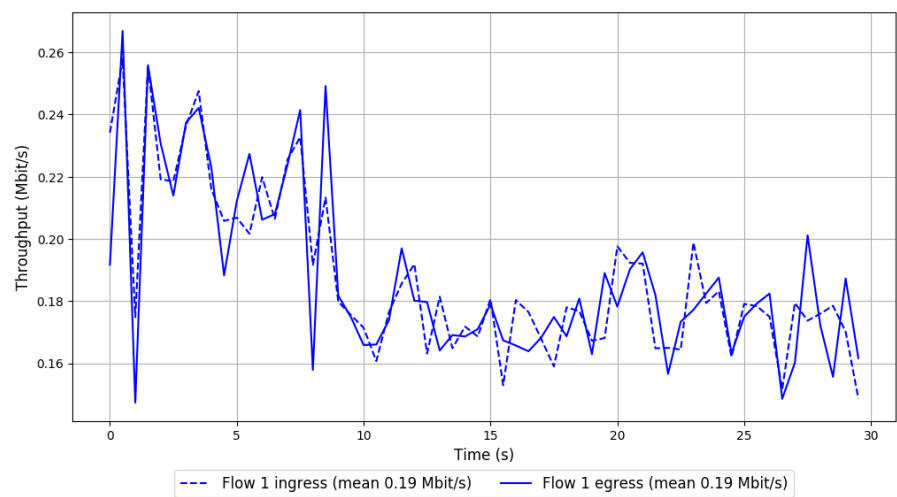


Run 1: Statistics of SCReAM

Start at: 2018-02-27 06:21:18
End at: 2018-02-27 06:21:48
Local clock offset: -6.603 ms
Remote clock offset: -68.821 ms

Below is generated by plot.py at 2018-02-27 08:06:33
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 144.157 ms
Loss rate: 0.24%
-- Flow 1:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 144.157 ms
Loss rate: 0.24%

Run 1: Report of SReAM — Data Link

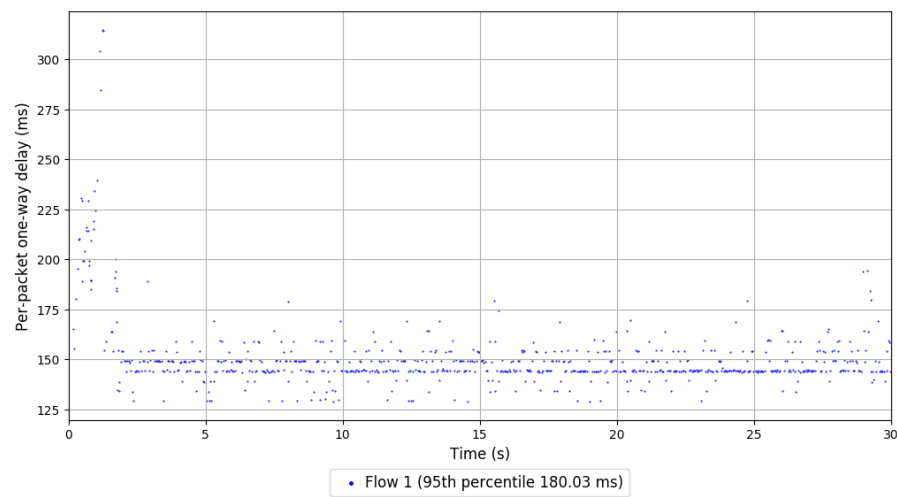
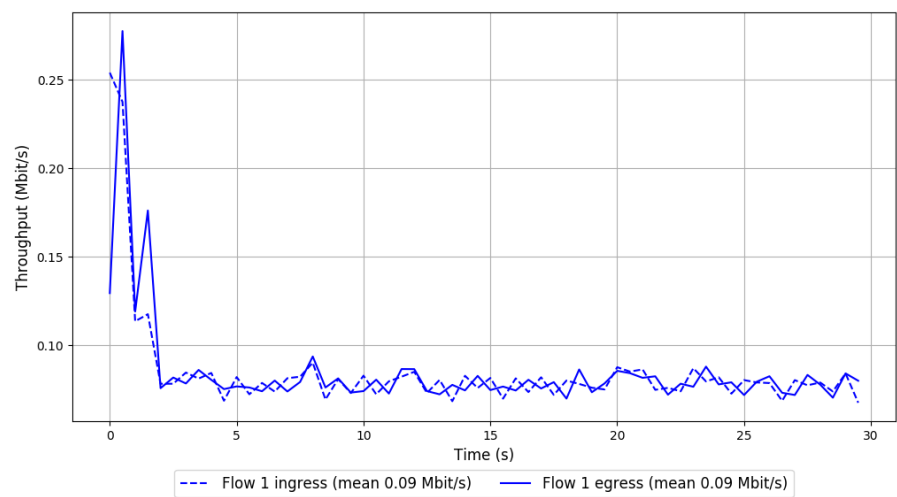


Run 2: Statistics of SCReAM

Start at: 2018-02-27 06:41:07
End at: 2018-02-27 06:41:37
Local clock offset: -4.543 ms
Remote clock offset: -74.621 ms

Below is generated by plot.py at 2018-02-27 08:06:33
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 180.026 ms
Loss rate: 0.24%
-- Flow 1:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 180.026 ms
Loss rate: 0.24%

Run 2: Report of SReAM — Data Link

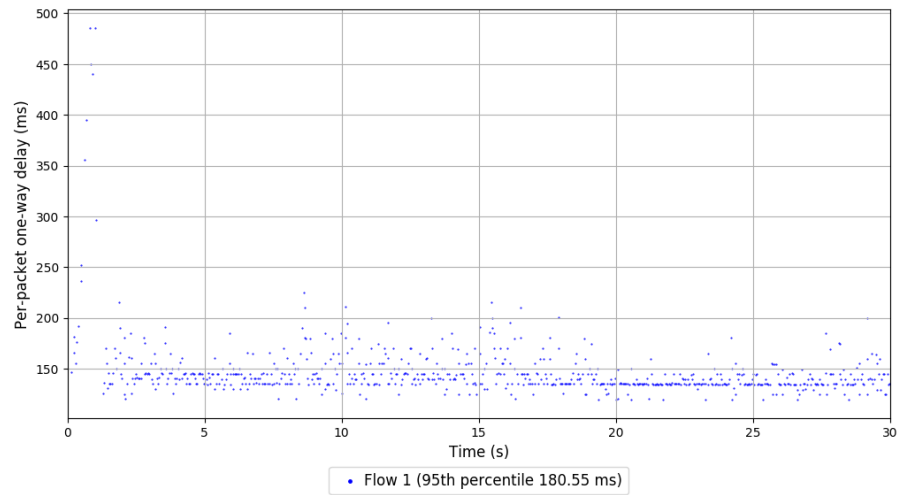
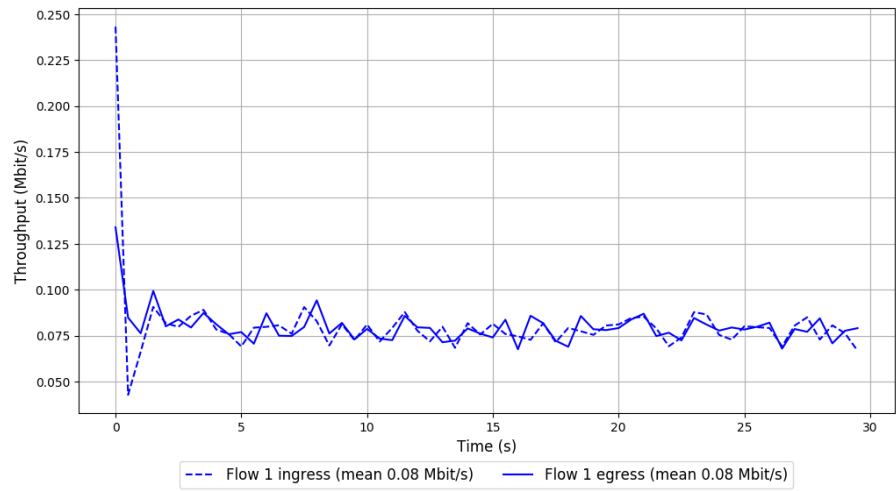


Run 3: Statistics of SCReAM

Start at: 2018-02-27 07:00:48
End at: 2018-02-27 07:01:18
Local clock offset: -9.038 ms
Remote clock offset: -69.773 ms

Below is generated by plot.py at 2018-02-27 08:06:33
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 180.547 ms
Loss rate: 0.80%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 180.547 ms
Loss rate: 0.80%

Run 3: Report of SReAM — Data Link

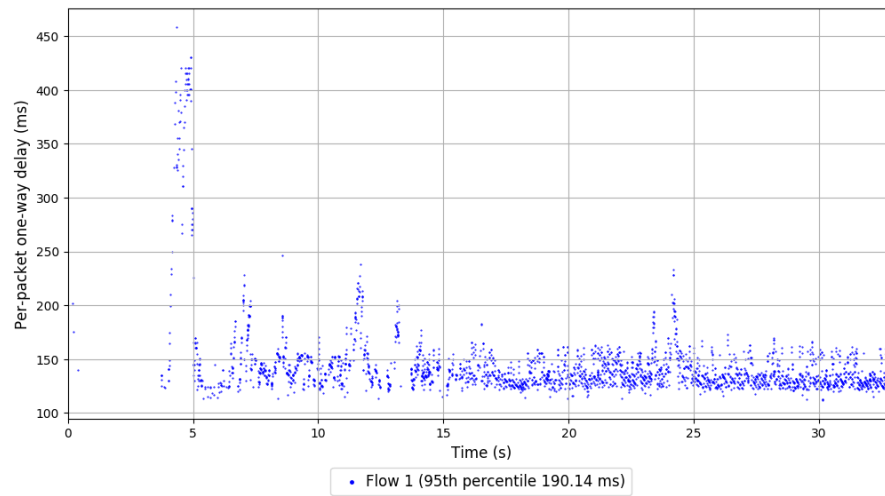
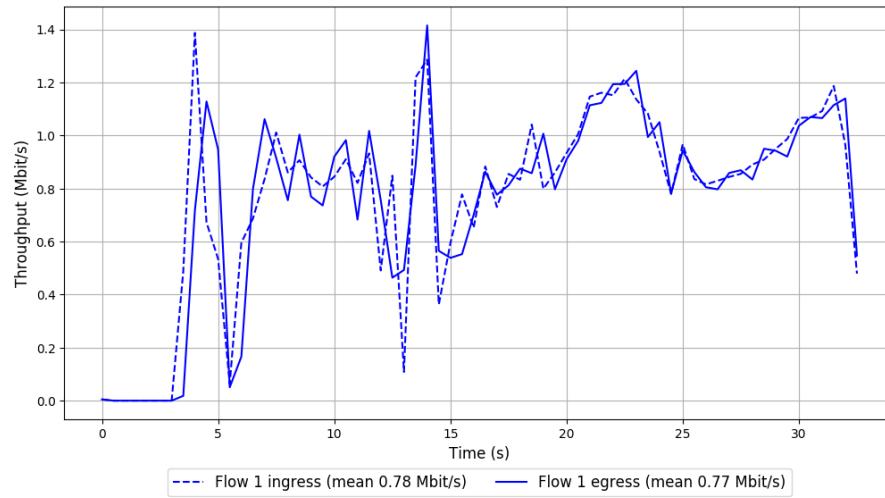


```
Run 1: Statistics of WebRTC media

Start at: 2018-02-27 06:22:24
End at: 2018-02-27 06:22:54
Local clock offset: -3.926 ms
Remote clock offset: -68.103 ms

# Below is generated by plot.py at 2018-02-27 08:06:33
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.77 Mbit/s
95th percentile per-packet one-way delay: 190.144 ms
Loss rate: 0.91%
-- Flow 1:
Average throughput: 0.77 Mbit/s
95th percentile per-packet one-way delay: 190.144 ms
Loss rate: 0.91%
```


Run 1: Report of WebRTC media — Data Link

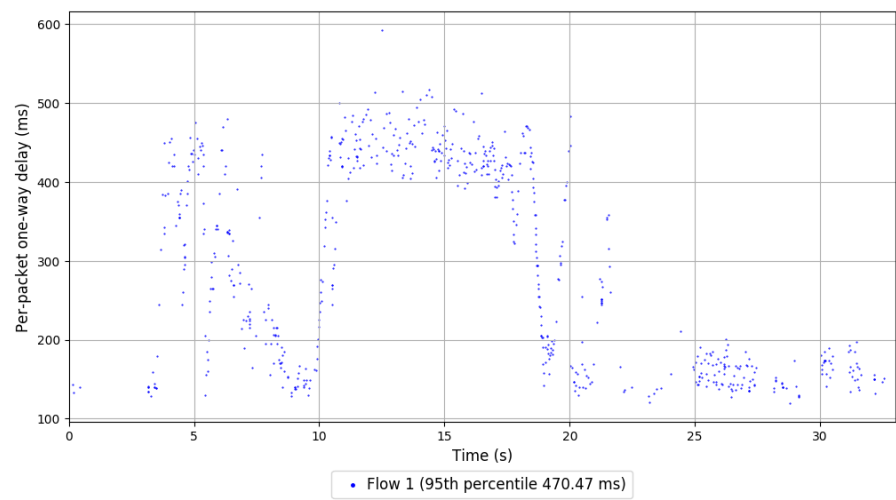
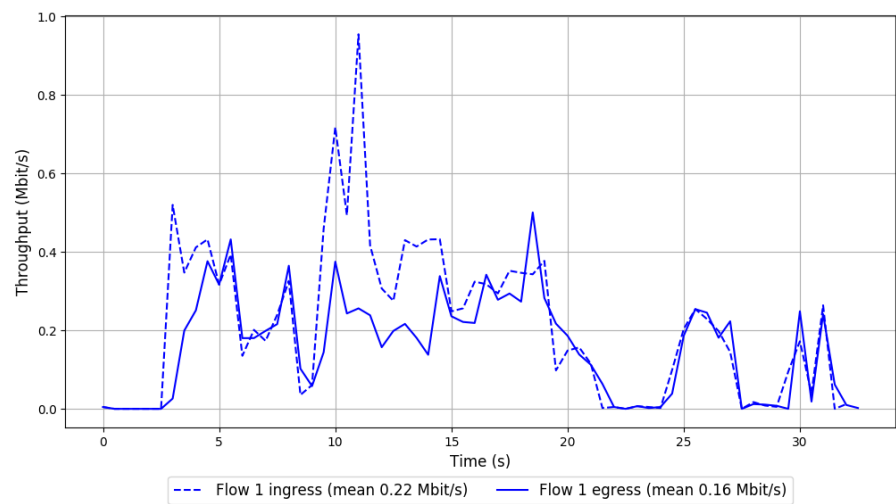


Run 2: Statistics of WebRTC media

Start at: 2018-02-27 06:42:12
End at: 2018-02-27 06:42:42
Local clock offset: -1.254 ms
Remote clock offset: -75.93 ms

Below is generated by plot.py at 2018-02-27 08:06:33
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 470.467 ms
Loss rate: 25.24%
-- Flow 1:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 470.467 ms
Loss rate: 25.24%

Run 2: Report of WebRTC media — Data Link

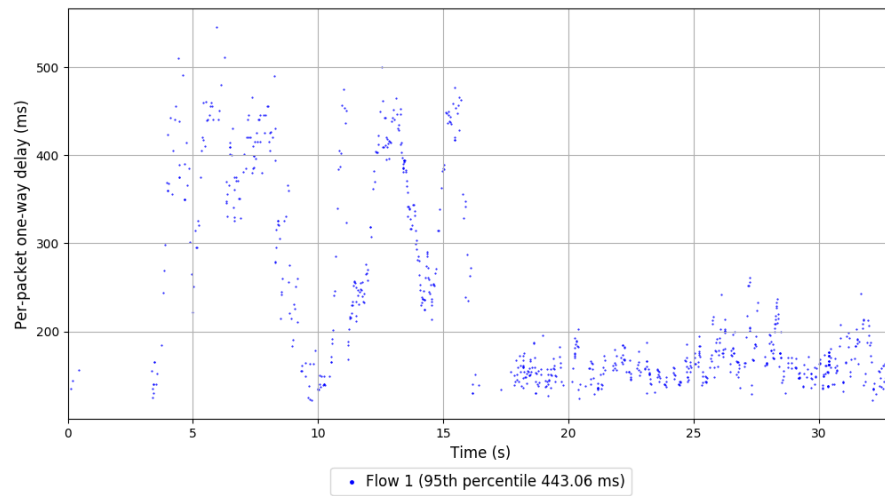
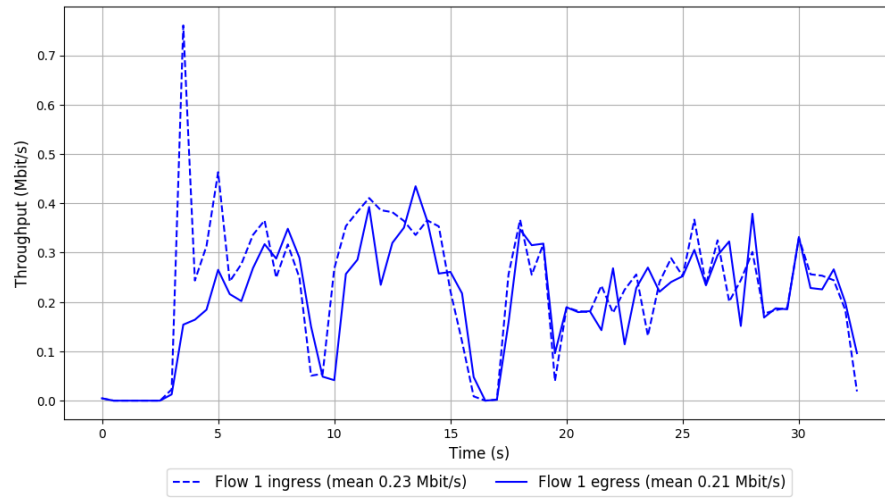


Run 3: Statistics of WebRTC media

Start at: 2018-02-27 07:01:54
End at: 2018-02-27 07:02:24
Local clock offset: -4.825 ms
Remote clock offset: -77.771 ms

Below is generated by plot.py at 2018-02-27 08:06:33
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 443.061 ms
Loss rate: 10.15%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 443.061 ms
Loss rate: 10.15%

Run 3: Report of WebRTC media — Data Link

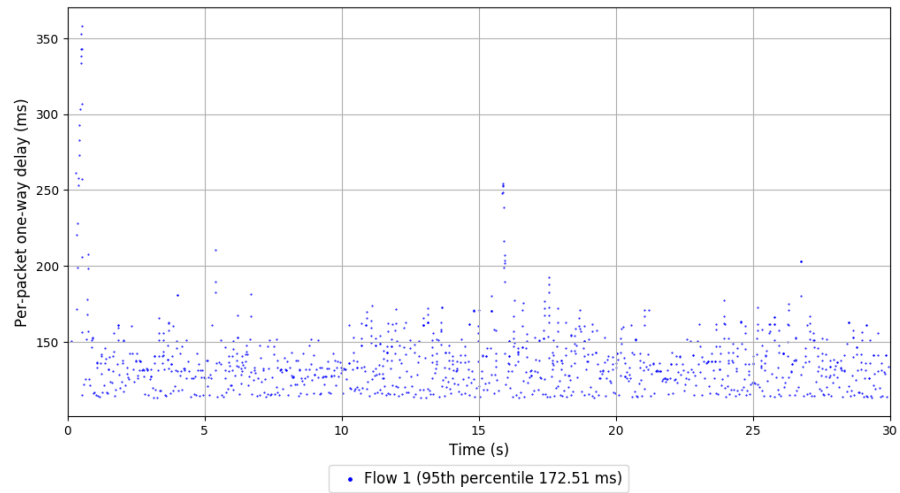
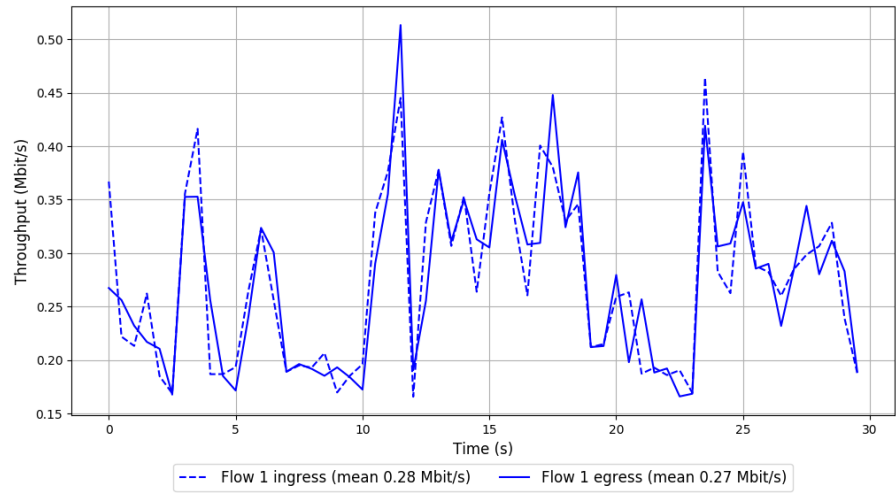


Run 1: Statistics of Sprout

Start at: 2018-02-27 06:20:13
End at: 2018-02-27 06:20:43
Local clock offset: -6.165 ms
Remote clock offset: -73.286 ms

Below is generated by plot.py at 2018-02-27 08:06:33
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.27 Mbit/s
95th percentile per-packet one-way delay: 172.509 ms
Loss rate: 0.53%
-- Flow 1:
Average throughput: 0.27 Mbit/s
95th percentile per-packet one-way delay: 172.509 ms
Loss rate: 0.53%

Run 1: Report of Sprout — Data Link

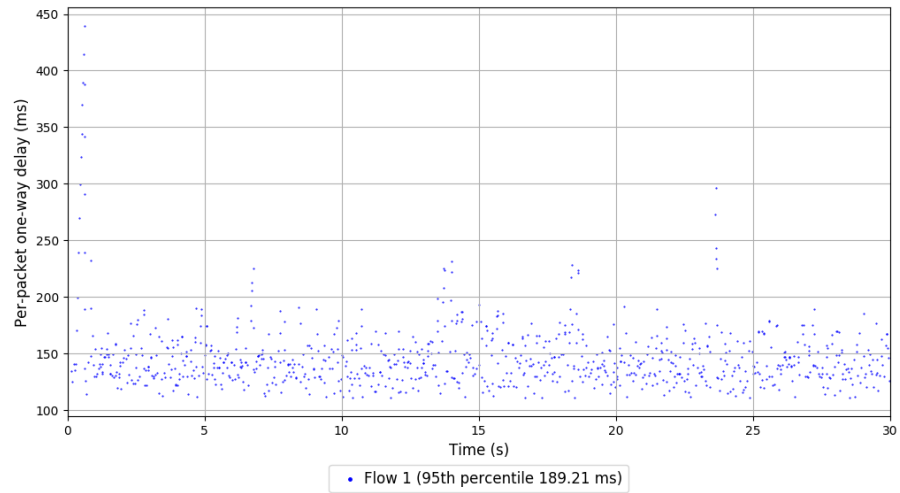
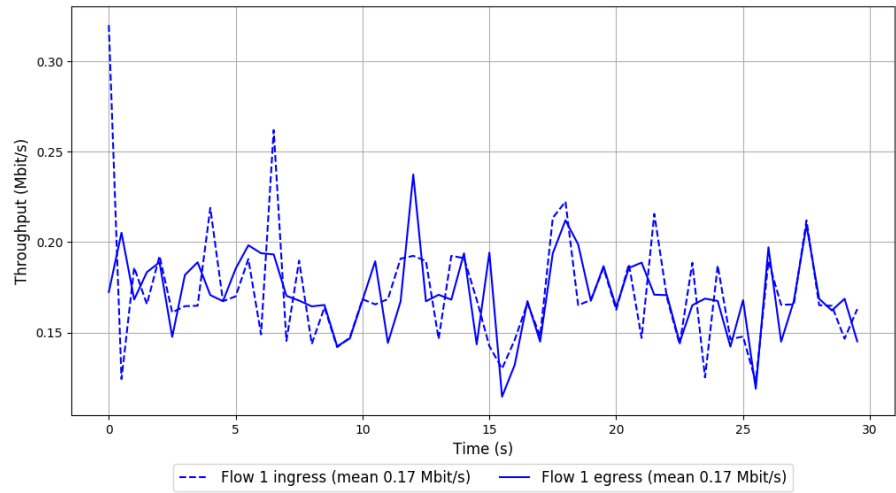


Run 2: Statistics of Sprout

Start at: 2018-02-27 06:40:01
End at: 2018-02-27 06:40:31
Local clock offset: -2.61 ms
Remote clock offset: -67.539 ms

Below is generated by plot.py at 2018-02-27 08:06:33
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.17 Mbit/s
95th percentile per-packet one-way delay: 189.212 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 0.17 Mbit/s
95th percentile per-packet one-way delay: 189.212 ms
Loss rate: 0.60%

Run 2: Report of Sprout — Data Link

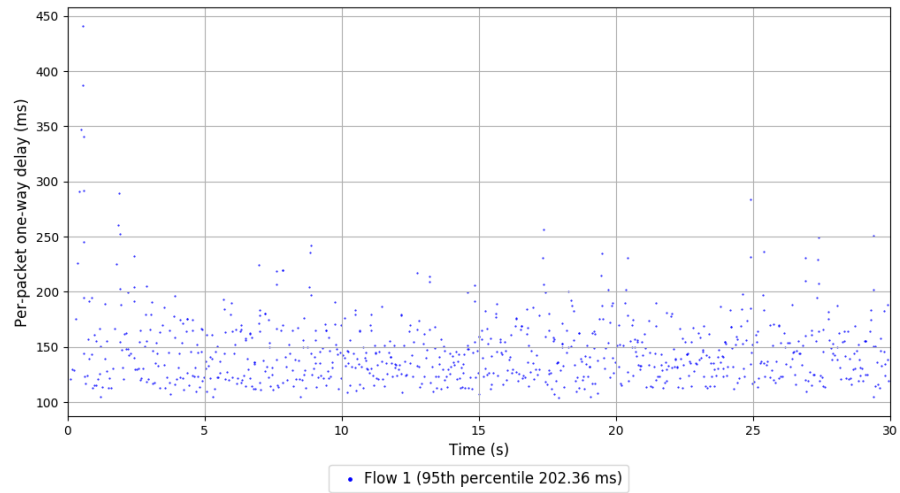
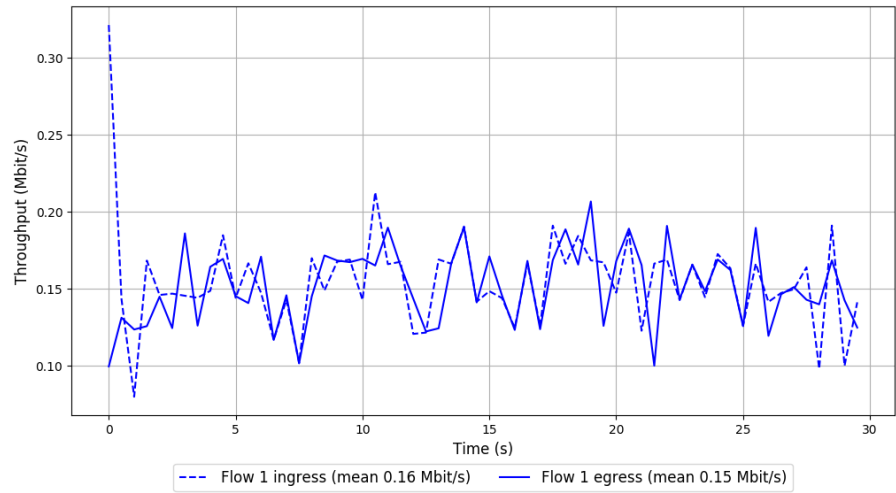


Run 3: Statistics of Sprout

Start at: 2018-02-27 06:59:43
End at: 2018-02-27 07:00:13
Local clock offset: -9.185 ms
Remote clock offset: -69.199 ms

Below is generated by plot.py at 2018-02-27 08:06:33
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 202.364 ms
Loss rate: 2.25%
-- Flow 1:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 202.364 ms
Loss rate: 2.25%

Run 3: Report of Sprout — Data Link

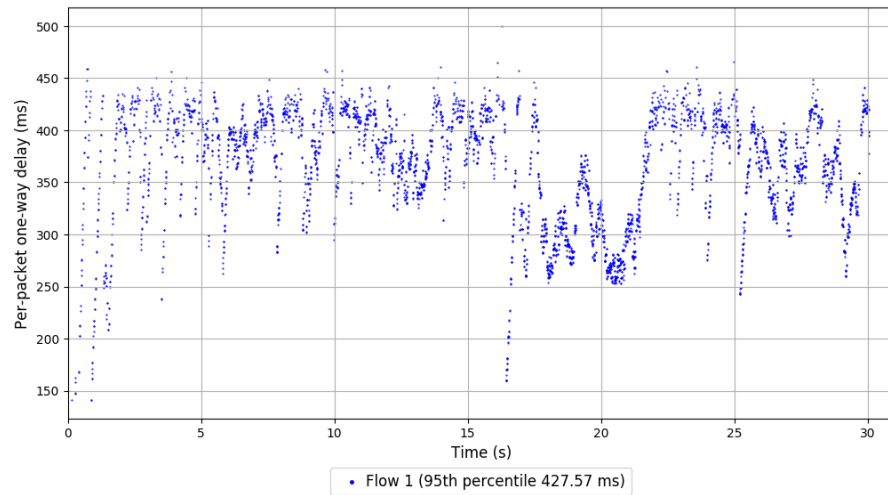
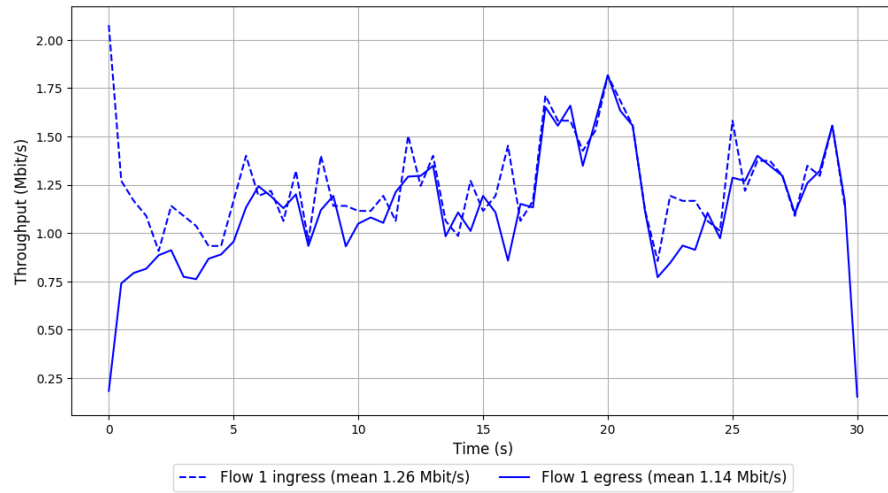


```
Run 1: Statistics of TaoVA-100x

Start at: 2018-02-27 06:08:05
End at: 2018-02-27 06:08:35
Local clock offset: -1.747 ms
Remote clock offset: -79.071 ms

# Below is generated by plot.py at 2018-02-27 08:06:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.14 Mbit/s
95th percentile per-packet one-way delay: 427.573 ms
Loss rate: 9.53%
-- Flow 1:
Average throughput: 1.14 Mbit/s
95th percentile per-packet one-way delay: 427.573 ms
Loss rate: 9.53%
```

Run 1: Report of TaoVA-100x — Data Link

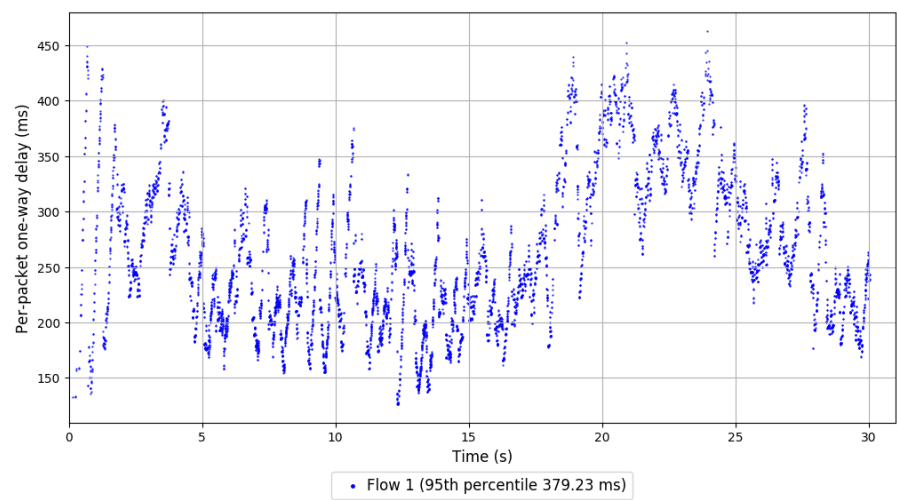
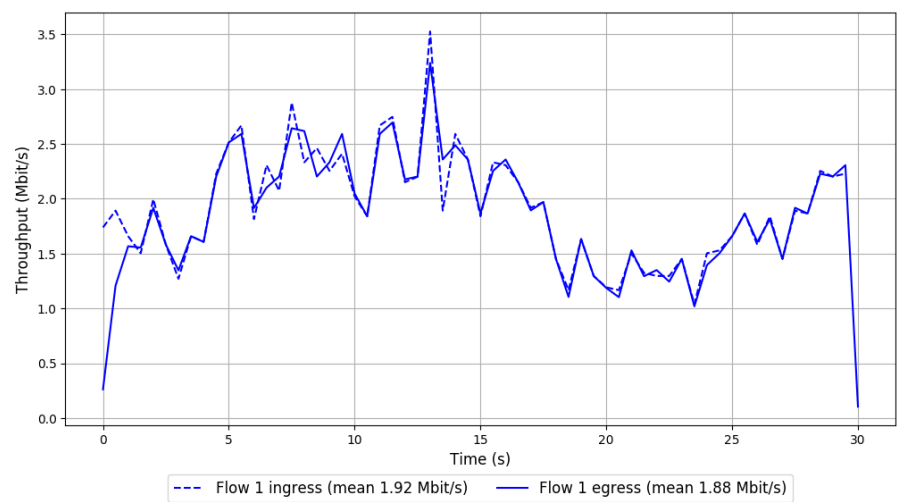


Run 2: Statistics of TaoVA-100x

Start at: 2018-02-27 06:27:53
End at: 2018-02-27 06:28:23
Local clock offset: -4.332 ms
Remote clock offset: -75.812 ms

Below is generated by plot.py at 2018-02-27 08:06:39
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.88 Mbit/s
95th percentile per-packet one-way delay: 379.226 ms
Loss rate: 2.05%
-- Flow 1:
Average throughput: 1.88 Mbit/s
95th percentile per-packet one-way delay: 379.226 ms
Loss rate: 2.05%

Run 2: Report of TaoVA-100x — Data Link

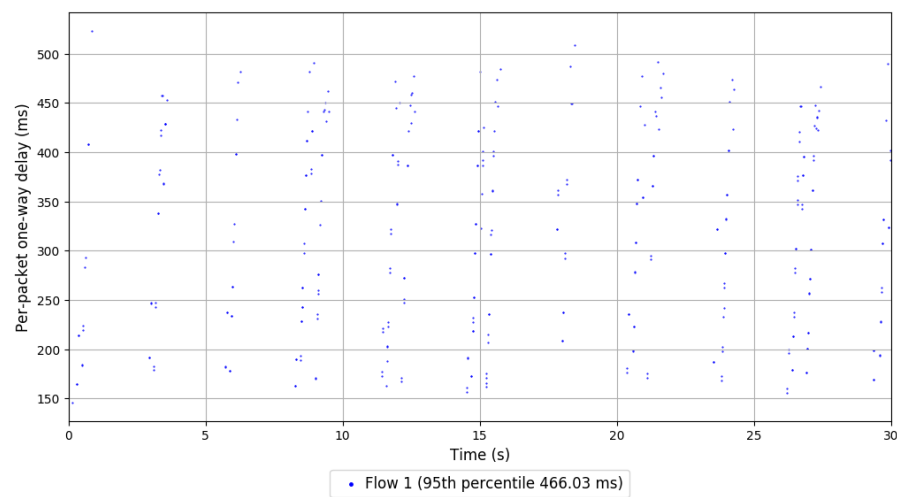
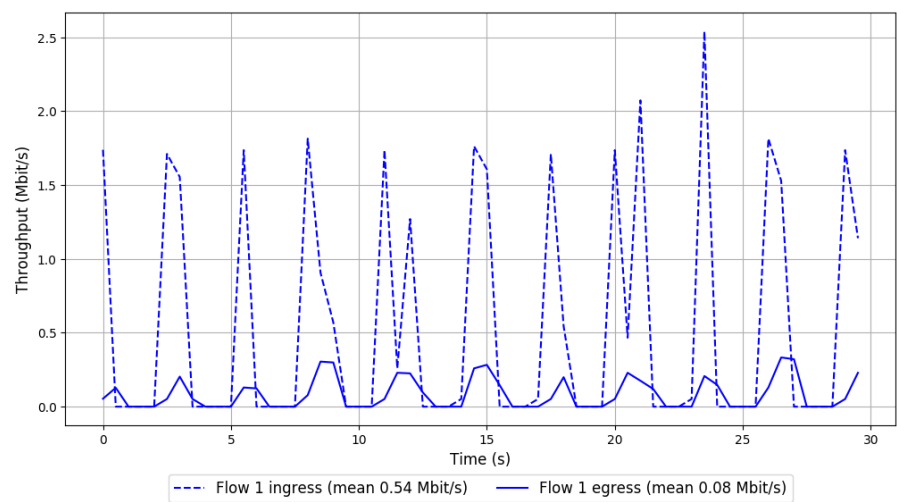


Run 3: Statistics of TaoVA-100x

Start at: 2018-02-27 06:47:40
End at: 2018-02-27 06:48:10
Local clock offset: -5.475 ms
Remote clock offset: -66.562 ms

Below is generated by plot.py at 2018-02-27 08:06:39
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 466.027 ms
Loss rate: 84.55%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 466.027 ms
Loss rate: 84.55%

Run 3: Report of TaoVA-100x — Data Link

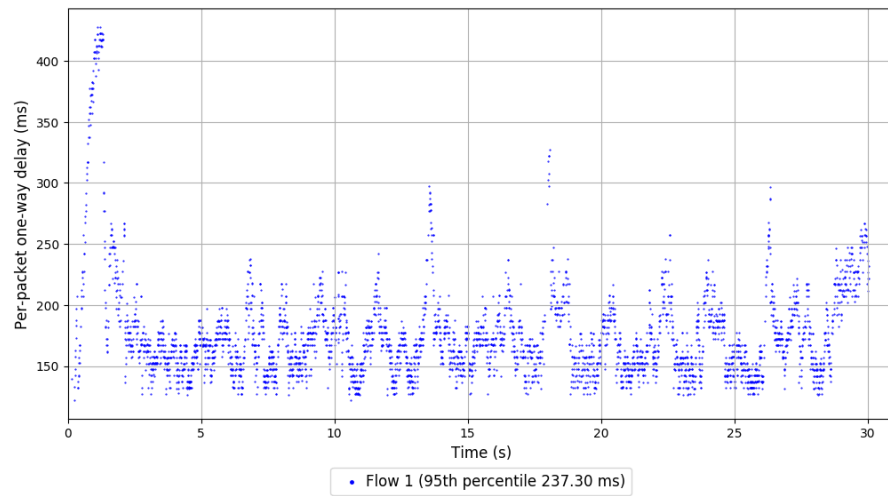
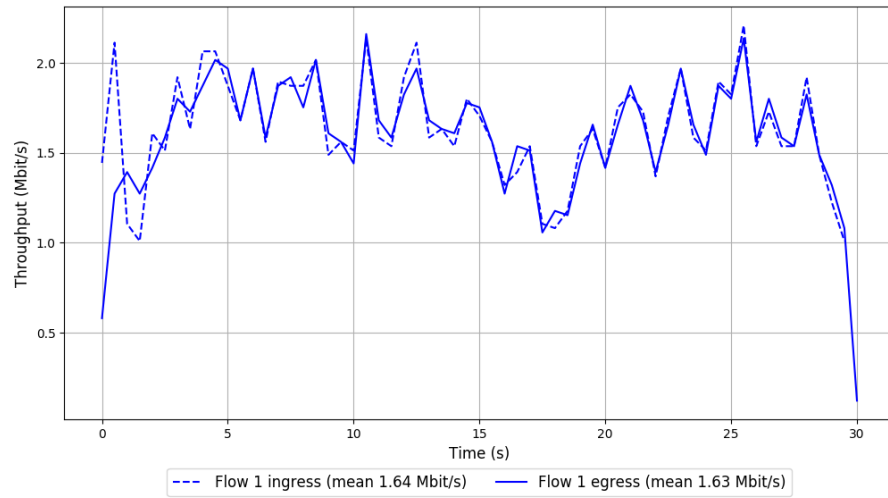


Run 1: Statistics of TCP Vegas

Start at: 2018-02-27 06:25:41
End at: 2018-02-27 06:26:11
Local clock offset: -4.586 ms
Remote clock offset: -70.271 ms

Below is generated by plot.py at 2018-02-27 08:06:39
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.63 Mbit/s
95th percentile per-packet one-way delay: 237.303 ms
Loss rate: 1.20%
-- Flow 1:
Average throughput: 1.63 Mbit/s
95th percentile per-packet one-way delay: 237.303 ms
Loss rate: 1.20%

Run 1: Report of TCP Vegas — Data Link

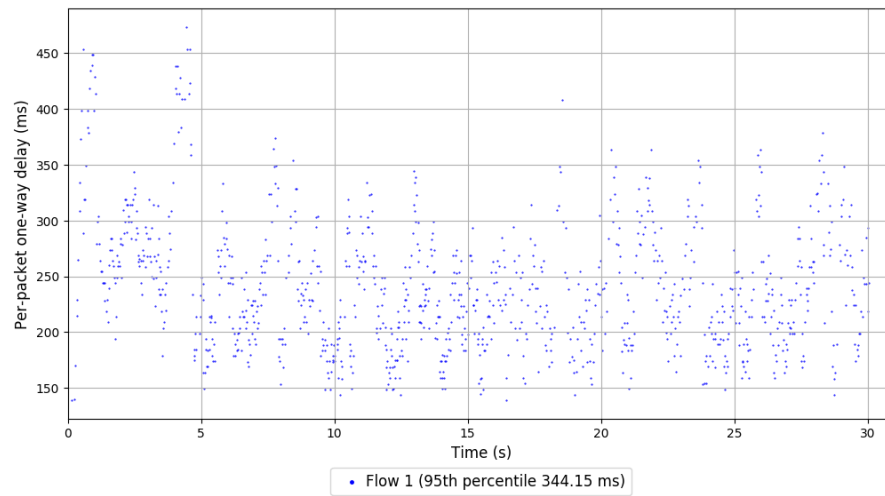
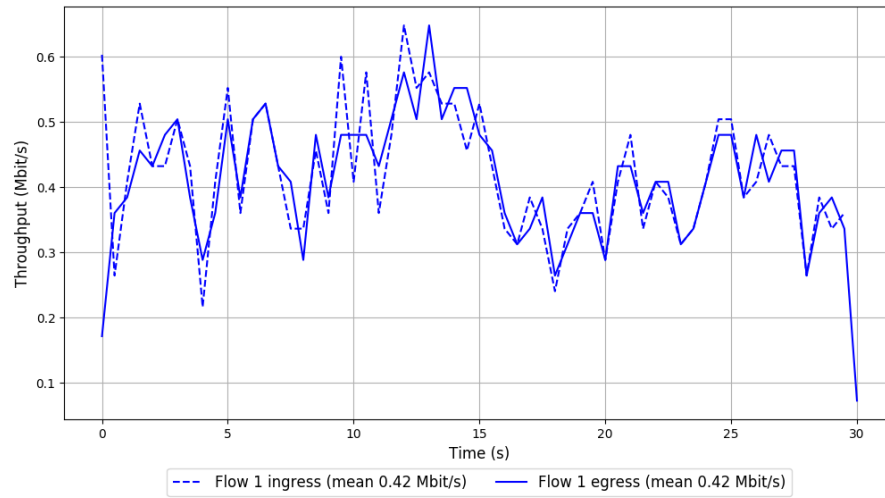


Run 2: Statistics of TCP Vegas

Start at: 2018-02-27 06:45:30
End at: 2018-02-27 06:46:00
Local clock offset: -1.496 ms
Remote clock offset: -81.14 ms

Below is generated by plot.py at 2018-02-27 08:06:39
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.42 Mbit/s
95th percentile per-packet one-way delay: 344.146 ms
Loss rate: 1.23%
-- Flow 1:
Average throughput: 0.42 Mbit/s
95th percentile per-packet one-way delay: 344.146 ms
Loss rate: 1.23%

Run 2: Report of TCP Vegas — Data Link

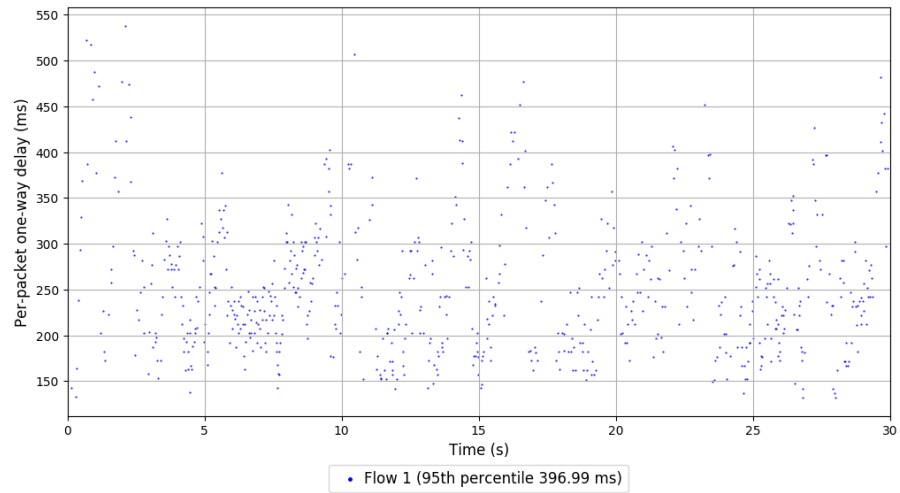
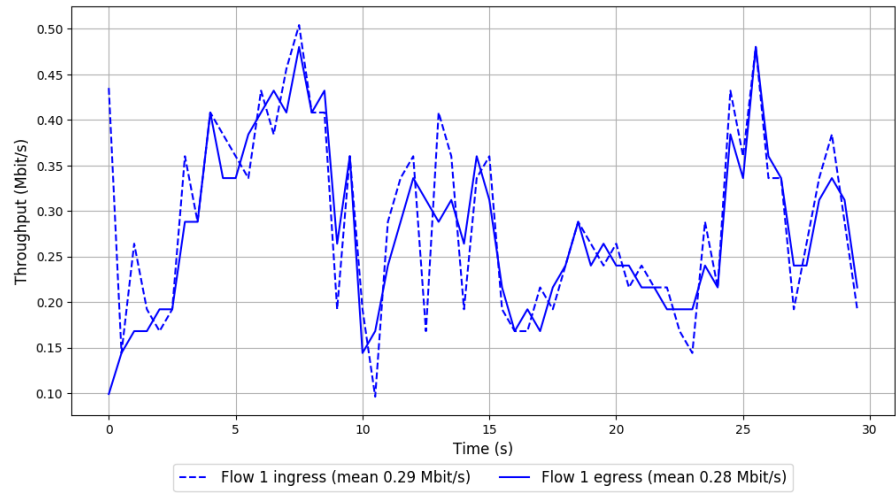


Run 3: Statistics of TCP Vegas

Start at: 2018-02-27 07:05:10
End at: 2018-02-27 07:05:40
Local clock offset: -3.356 ms
Remote clock offset: -76.218 ms

Below is generated by plot.py at 2018-02-27 08:06:39
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.28 Mbit/s
95th percentile per-packet one-way delay: 396.987 ms
Loss rate: 3.47%
-- Flow 1:
Average throughput: 0.28 Mbit/s
95th percentile per-packet one-way delay: 396.987 ms
Loss rate: 3.47%

Run 3: Report of TCP Vegas — Data Link

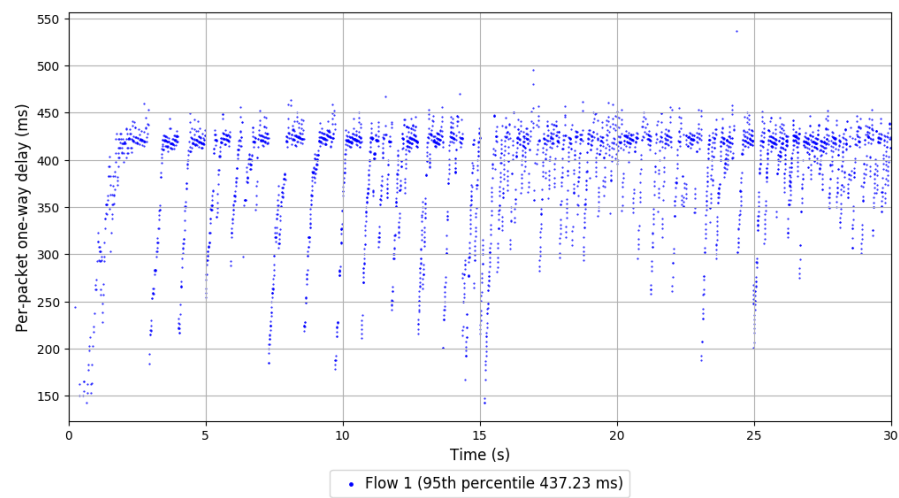
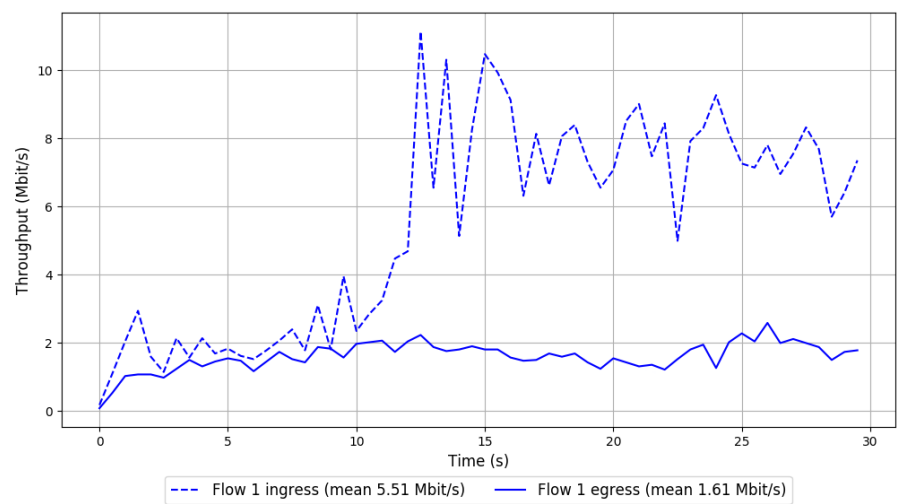


Run 1: Statistics of Verus

Start at: 2018-02-27 06:26:47
End at: 2018-02-27 06:27:17
Local clock offset: -6.322 ms
Remote clock offset: -73.116 ms

Below is generated by plot.py at 2018-02-27 08:06:41
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.61 Mbit/s
95th percentile per-packet one-way delay: 437.234 ms
Loss rate: 70.90%
-- Flow 1:
Average throughput: 1.61 Mbit/s
95th percentile per-packet one-way delay: 437.234 ms
Loss rate: 70.90%

Run 1: Report of Verus — Data Link

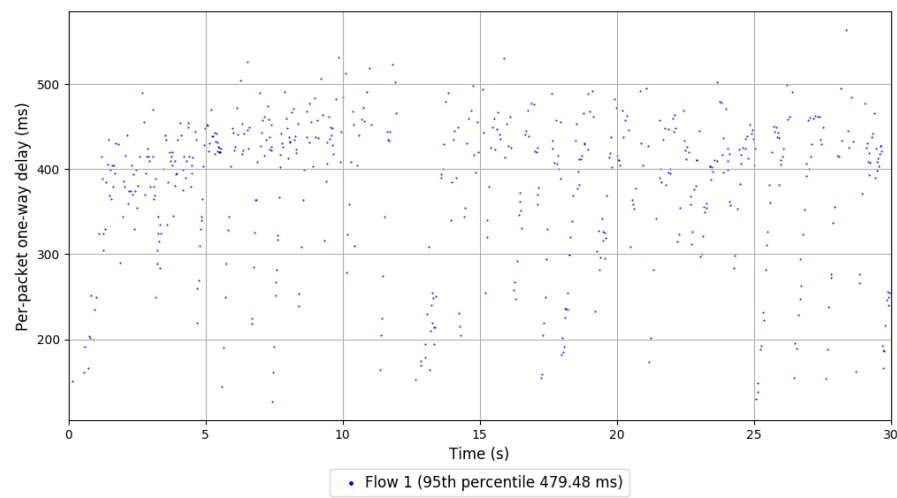
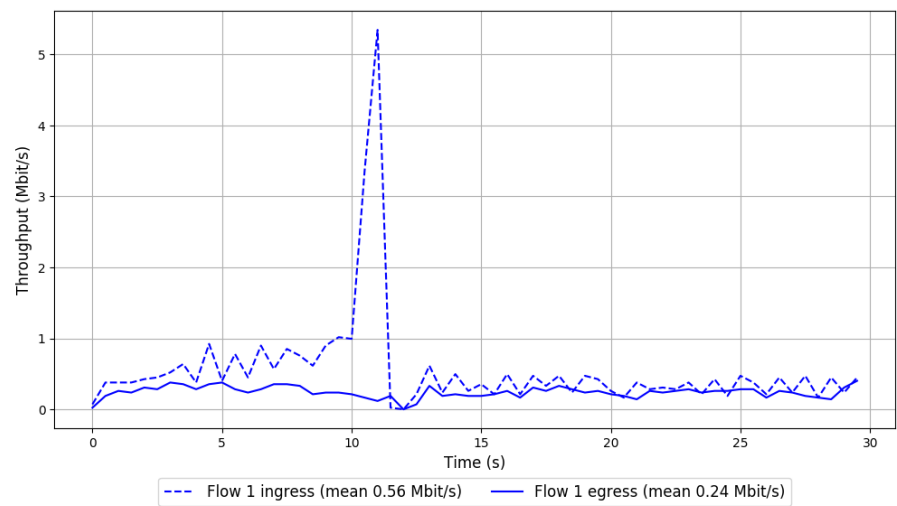


Run 2: Statistics of Verus

Start at: 2018-02-27 06:46:35
End at: 2018-02-27 06:47:05
Local clock offset: -3.412 ms
Remote clock offset: -68.68 ms

Below is generated by plot.py at 2018-02-27 08:06:41
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.24 Mbit/s
95th percentile per-packet one-way delay: 479.479 ms
Loss rate: 56.48%
-- Flow 1:
Average throughput: 0.24 Mbit/s
95th percentile per-packet one-way delay: 479.479 ms
Loss rate: 56.48%

Run 2: Report of Verus — Data Link

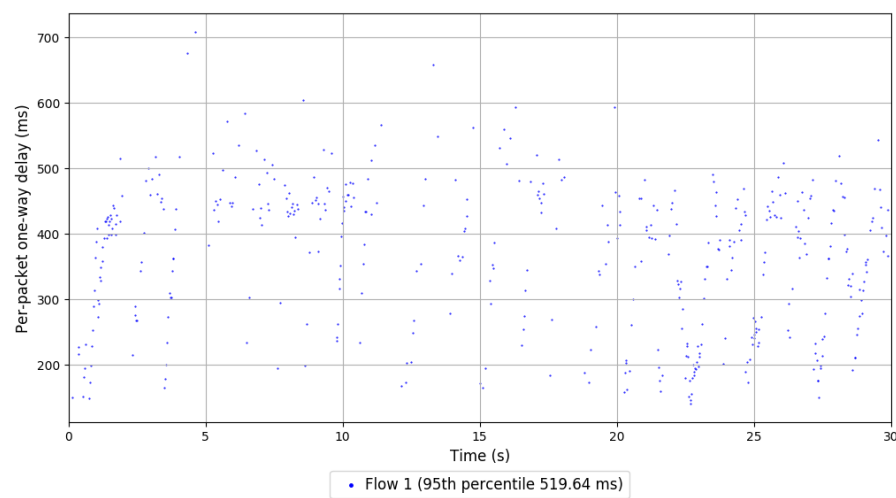
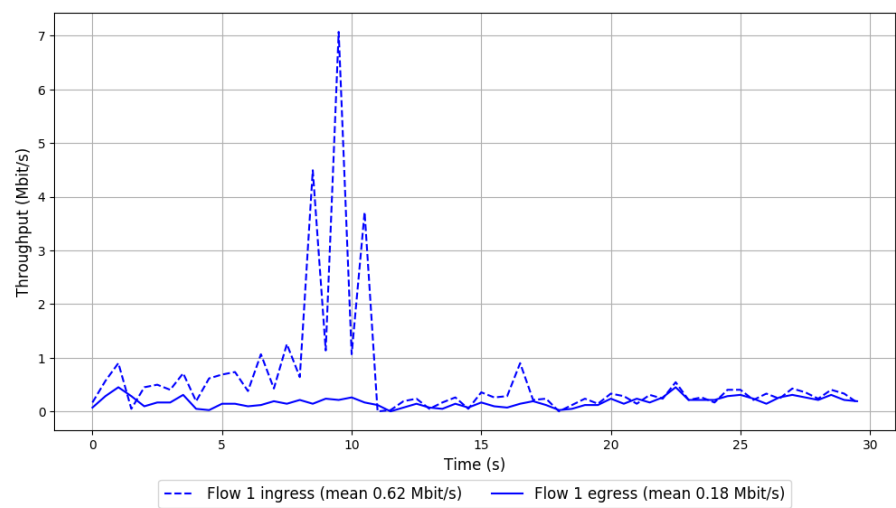


Run 3: Statistics of Verus

Start at: 2018-02-27 07:06:16
End at: 2018-02-27 07:06:46
Local clock offset: -2.617 ms
Remote clock offset: -73.05 ms

Below is generated by plot.py at 2018-02-27 08:06:41
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 519.641 ms
Loss rate: 71.41%
-- Flow 1:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 519.641 ms
Loss rate: 71.41%

Run 3: Report of Verus — Data Link

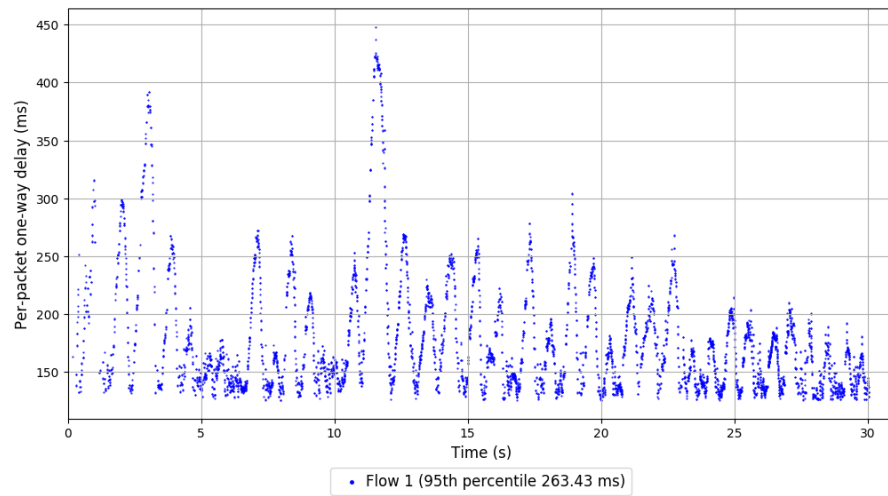
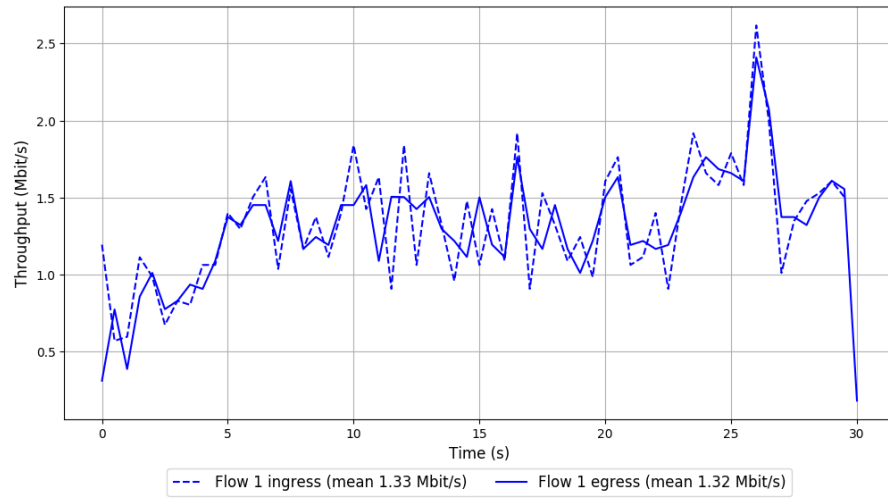


Run 1: Statistics of Copa

Start at: 2018-02-27 06:12:29
End at: 2018-02-27 06:12:59
Local clock offset: -2.475 ms
Remote clock offset: -72.958 ms

Below is generated by plot.py at 2018-02-27 08:06:42
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.32 Mbit/s
95th percentile per-packet one-way delay: 263.427 ms
Loss rate: 1.27%
-- Flow 1:
Average throughput: 1.32 Mbit/s
95th percentile per-packet one-way delay: 263.427 ms
Loss rate: 1.27%

Run 1: Report of Copa — Data Link

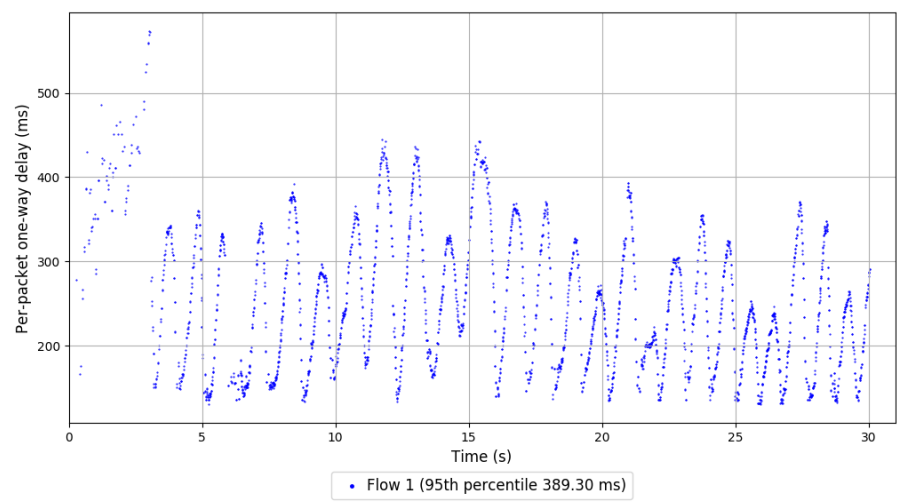
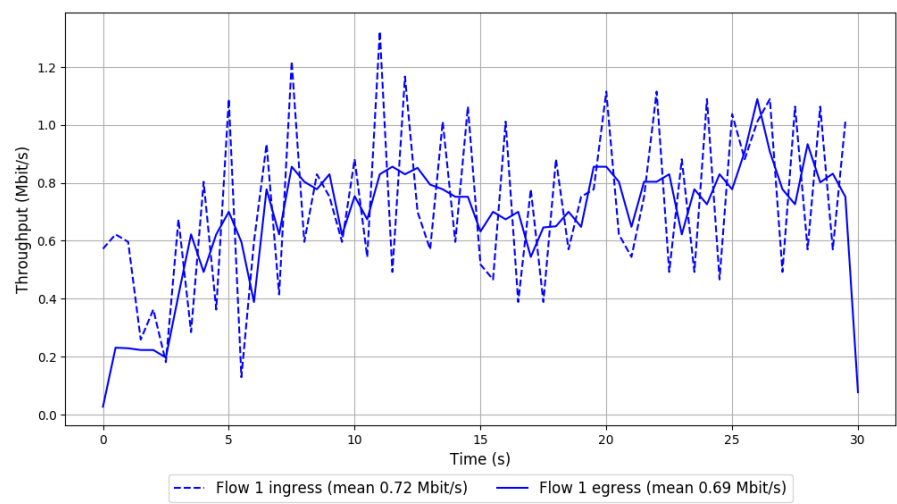


Run 2: Statistics of Copa

Start at: 2018-02-27 06:32:17
End at: 2018-02-27 06:32:47
Local clock offset: -0.699 ms
Remote clock offset: -69.942 ms

Below is generated by plot.py at 2018-02-27 08:06:42
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.69 Mbit/s
95th percentile per-packet one-way delay: 389.296 ms
Loss rate: 4.55%
-- Flow 1:
Average throughput: 0.69 Mbit/s
95th percentile per-packet one-way delay: 389.296 ms
Loss rate: 4.55%

Run 2: Report of Copa — Data Link

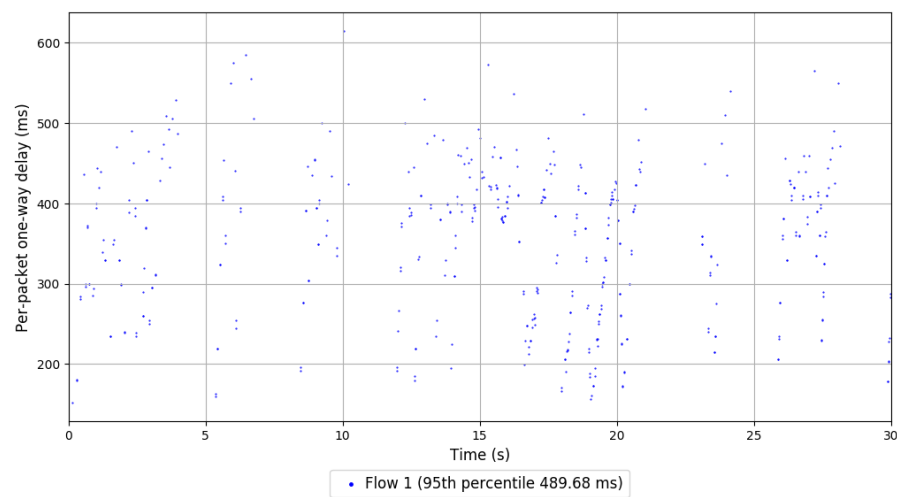
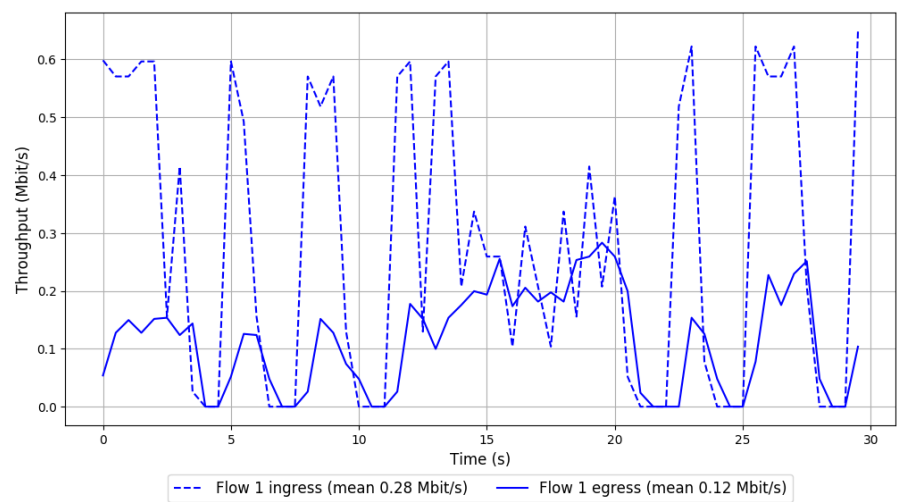


Run 3: Statistics of Copa

Start at: 2018-02-27 06:52:02
End at: 2018-02-27 06:52:32
Local clock offset: -6.887 ms
Remote clock offset: -78.601 ms

Below is generated by plot.py at 2018-02-27 08:06:42
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.12 Mbit/s
95th percentile per-packet one-way delay: 489.676 ms
Loss rate: 58.95%
-- Flow 1:
Average throughput: 0.12 Mbit/s
95th percentile per-packet one-way delay: 489.676 ms
Loss rate: 58.95%

Run 3: Report of Copa — Data Link

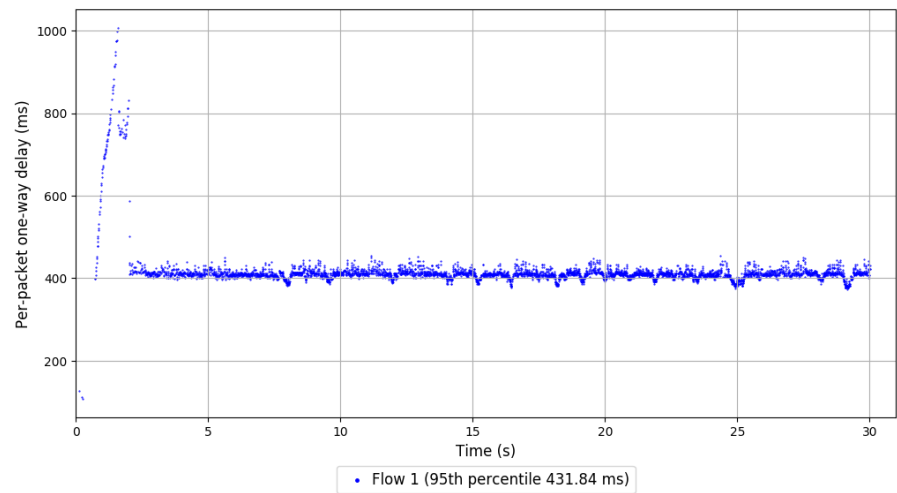
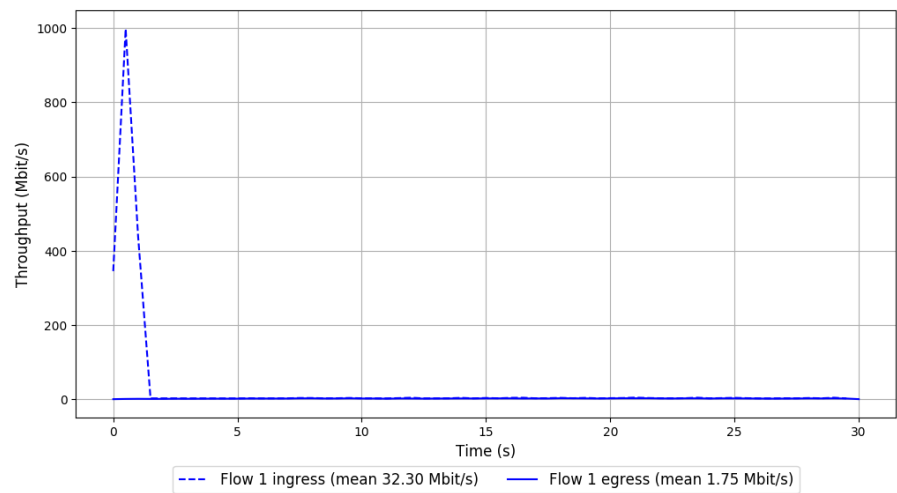


Run 1: Statistics of FillP

Start at: 2018-02-27 06:13:35
End at: 2018-02-27 06:14:05
Local clock offset: -2.668 ms
Remote clock offset: -67.575 ms

Below is generated by plot.py at 2018-02-27 08:06:52
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.75 Mbit/s
95th percentile per-packet one-way delay: 431.842 ms
Loss rate: 94.61%
-- Flow 1:
Average throughput: 1.75 Mbit/s
95th percentile per-packet one-way delay: 431.842 ms
Loss rate: 94.61%

Run 1: Report of FillP — Data Link

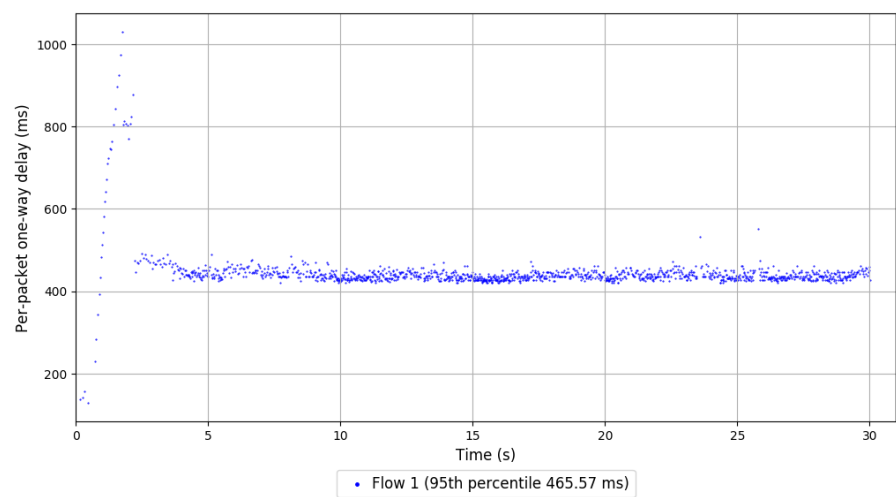
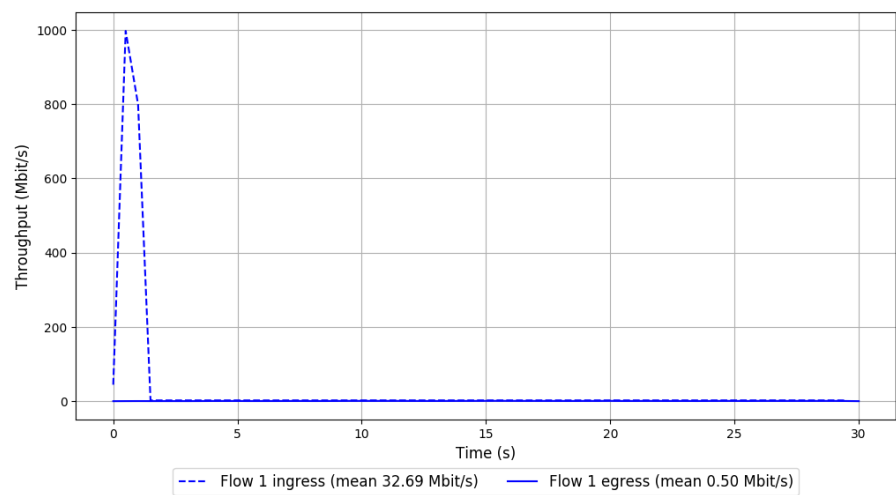


Run 2: Statistics of FillP

Start at: 2018-02-27 06:33:23
End at: 2018-02-27 06:33:53
Local clock offset: -0.522 ms
Remote clock offset: -75.68 ms

Below is generated by plot.py at 2018-02-27 08:06:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.50 Mbit/s
95th percentile per-packet one-way delay: 465.572 ms
Loss rate: 98.49%
-- Flow 1:
Average throughput: 0.50 Mbit/s
95th percentile per-packet one-way delay: 465.572 ms
Loss rate: 98.49%

Run 2: Report of FillP — Data Link

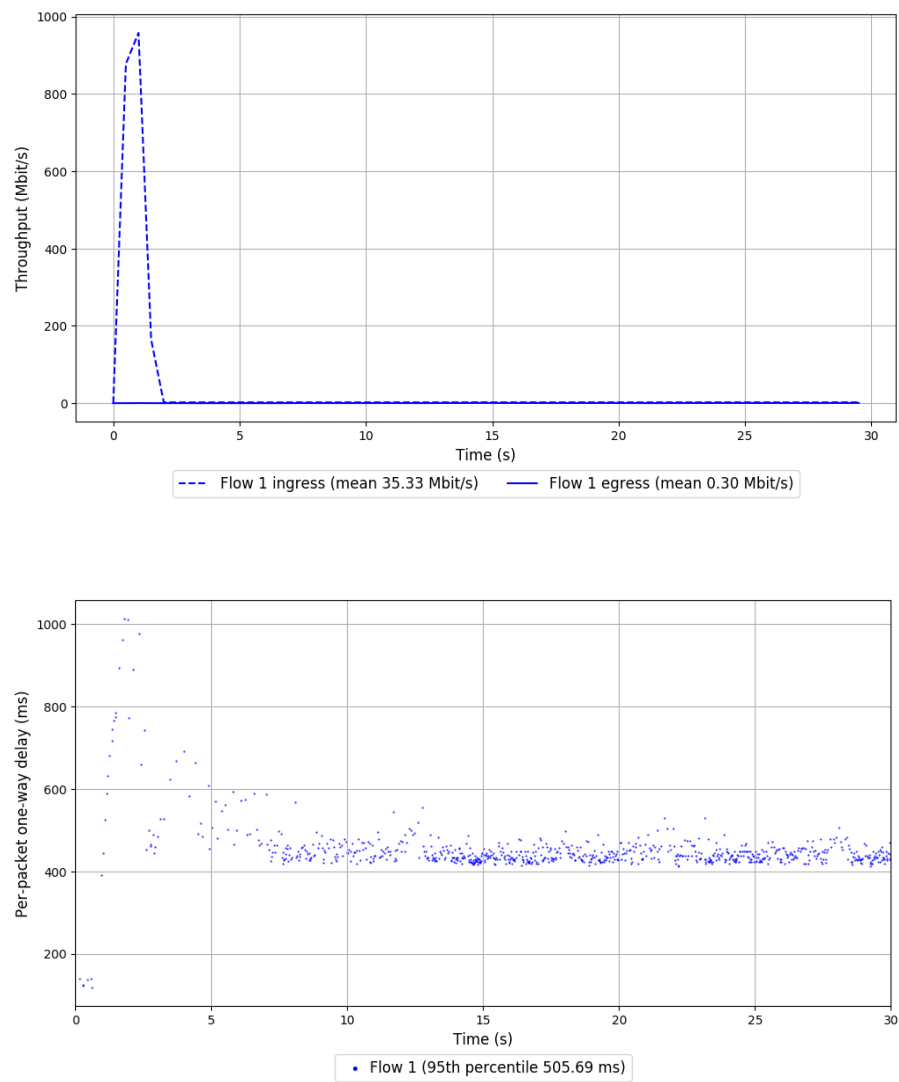


Run 3: Statistics of FillP

Start at: 2018-02-27 06:53:08
End at: 2018-02-27 06:53:38
Local clock offset: -8.822 ms
Remote clock offset: -75.949 ms

Below is generated by plot.py at 2018-02-27 08:06:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.30 Mbit/s
95th percentile per-packet one-way delay: 505.686 ms
Loss rate: 99.15%
-- Flow 1:
Average throughput: 0.30 Mbit/s
95th percentile per-packet one-way delay: 505.686 ms
Loss rate: 99.15%

Run 3: Report of FillP — Data Link



Run 1: Statistics of Indigo-1-32

Start at: 2018-02-27 06:15:48

End at: 2018-02-27 06:16:18

Local clock offset: -0.15 ms

Remote clock offset: -67.757 ms

Below is generated by plot.py at 2018-02-27 08:06:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.95 Mbit/s

95th percentile per-packet one-way delay: 174.975 ms

Loss rate: 0.93%

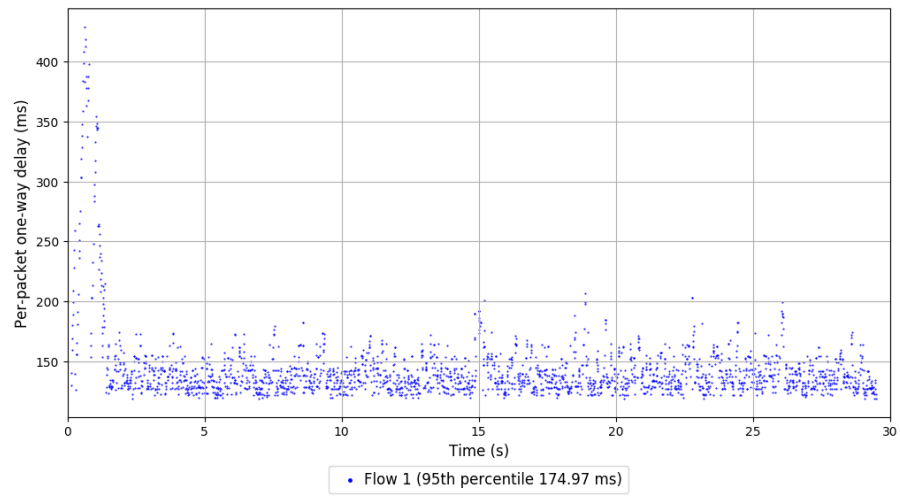
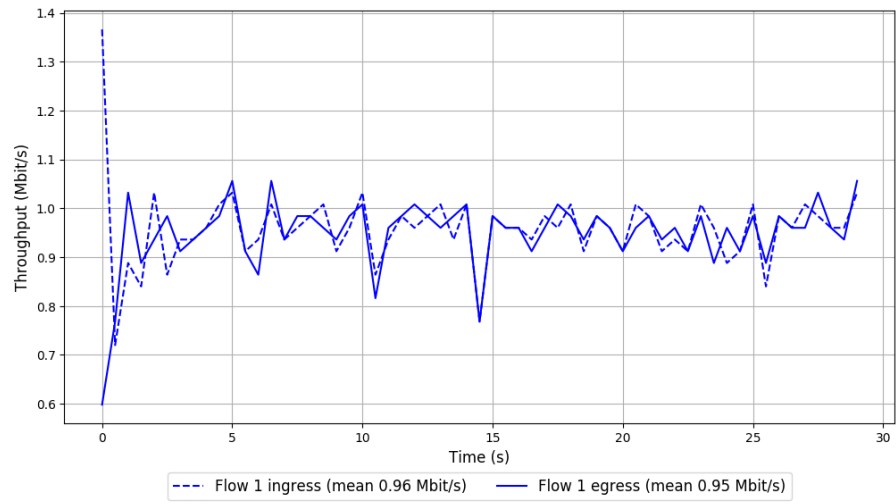
-- Flow 1:

Average throughput: 0.95 Mbit/s

95th percentile per-packet one-way delay: 174.975 ms

Loss rate: 0.93%

Run 1: Report of Indigo-1-32 — Data Link

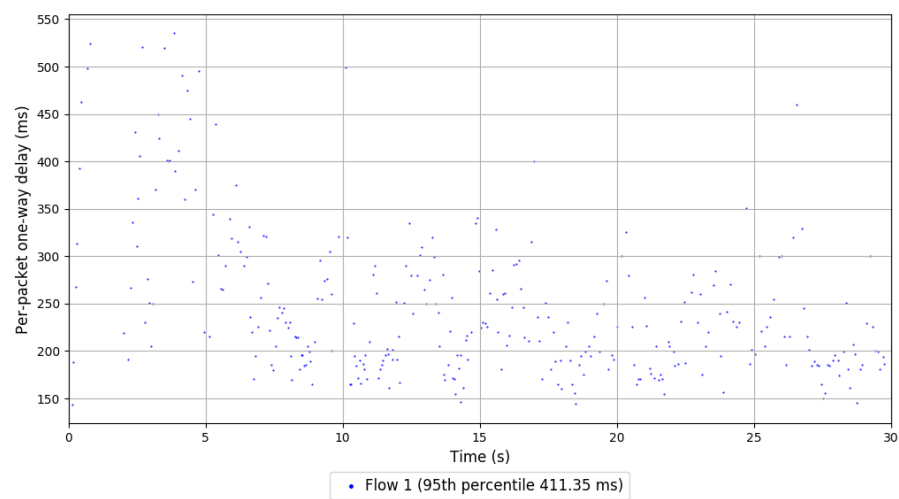
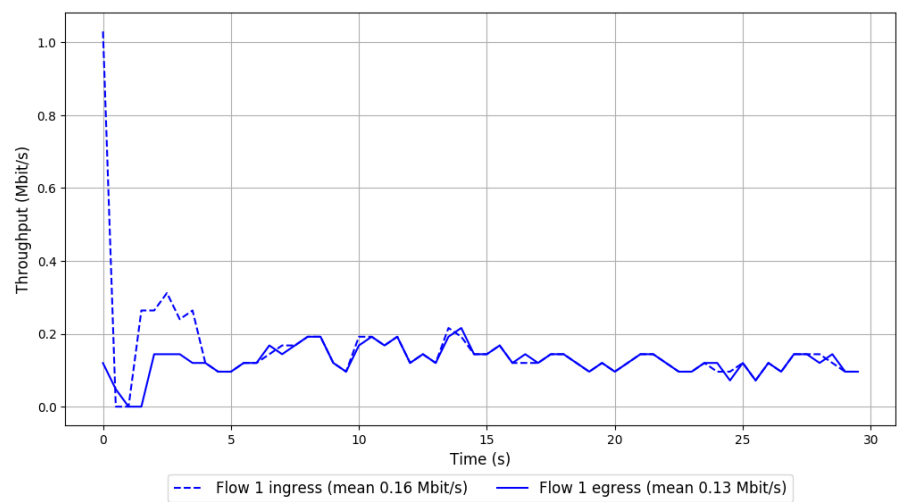


Run 2: Statistics of Indigo-1-32

Start at: 2018-02-27 06:35:37
End at: 2018-02-27 06:36:07
Local clock offset: -2.753 ms
Remote clock offset: -68.621 ms

Below is generated by plot.py at 2018-02-27 08:06:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 411.349 ms
Loss rate: 17.86%
-- Flow 1:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 411.349 ms
Loss rate: 17.86%

Run 2: Report of Indigo-1-32 — Data Link

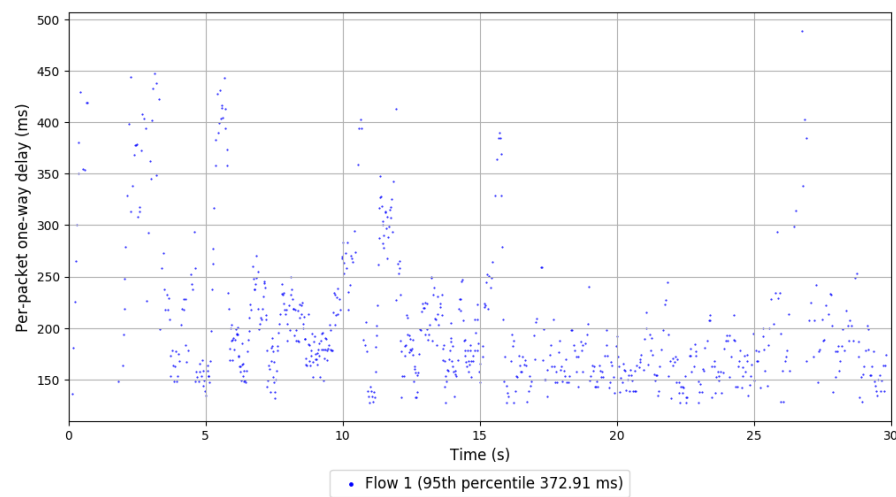
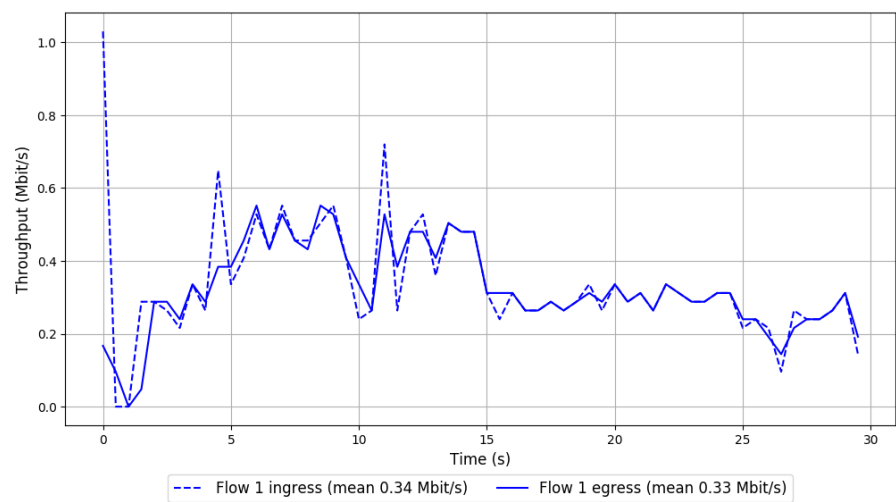


Run 3: Statistics of Indigo-1-32

Start at: 2018-02-27 06:55:21
End at: 2018-02-27 06:55:51
Local clock offset: -6.385 ms
Remote clock offset: -69.644 ms

Below is generated by plot.py at 2018-02-27 08:06:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.33 Mbit/s
95th percentile per-packet one-way delay: 372.906 ms
Loss rate: 4.70%
-- Flow 1:
Average throughput: 0.33 Mbit/s
95th percentile per-packet one-way delay: 372.906 ms
Loss rate: 4.70%

Run 3: Report of Indigo-1-32 — Data Link

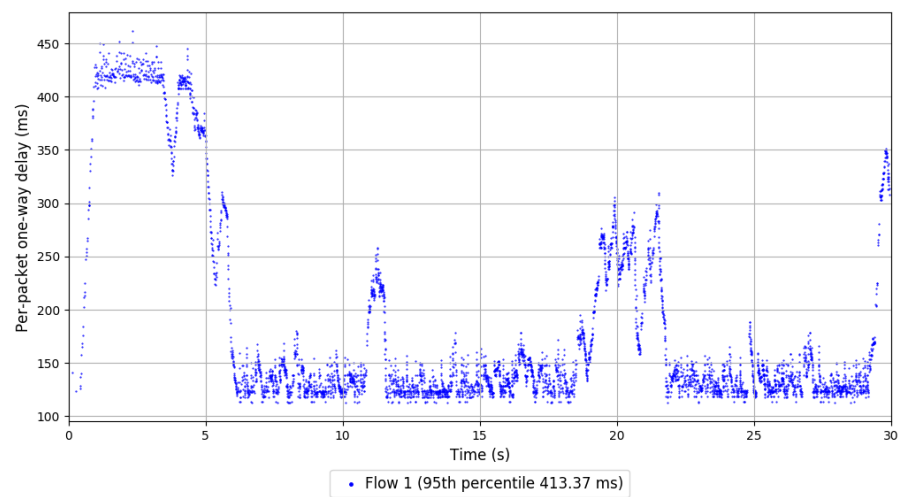
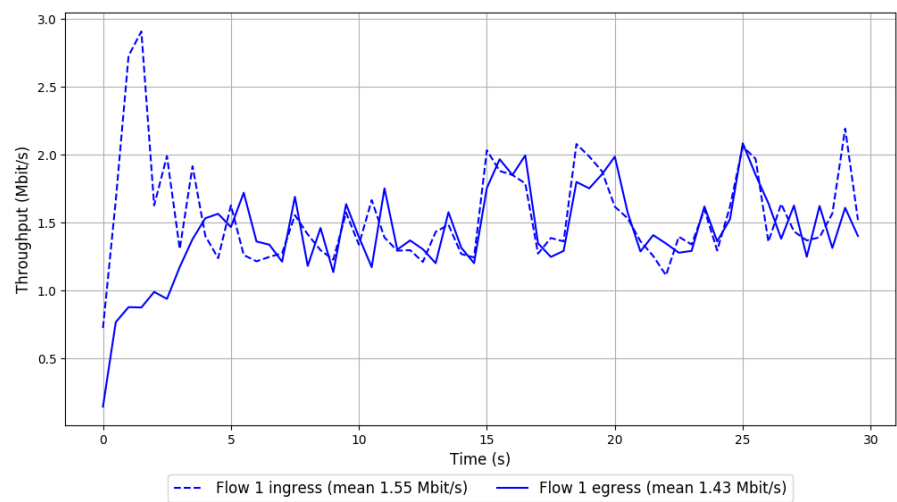


Run 1: Statistics of Vivace-latency

Start at: 2018-02-27 06:23:30
End at: 2018-02-27 06:24:00
Local clock offset: -5.411 ms
Remote clock offset: -66.94 ms

Below is generated by plot.py at 2018-02-27 08:06:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.43 Mbit/s
95th percentile per-packet one-way delay: 413.369 ms
Loss rate: 8.20%
-- Flow 1:
Average throughput: 1.43 Mbit/s
95th percentile per-packet one-way delay: 413.369 ms
Loss rate: 8.20%

Run 1: Report of Vivace-latency — Data Link

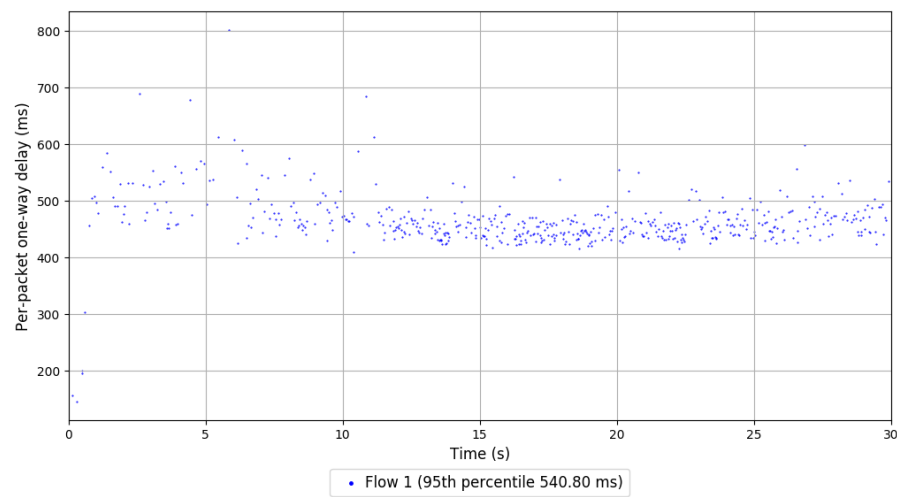
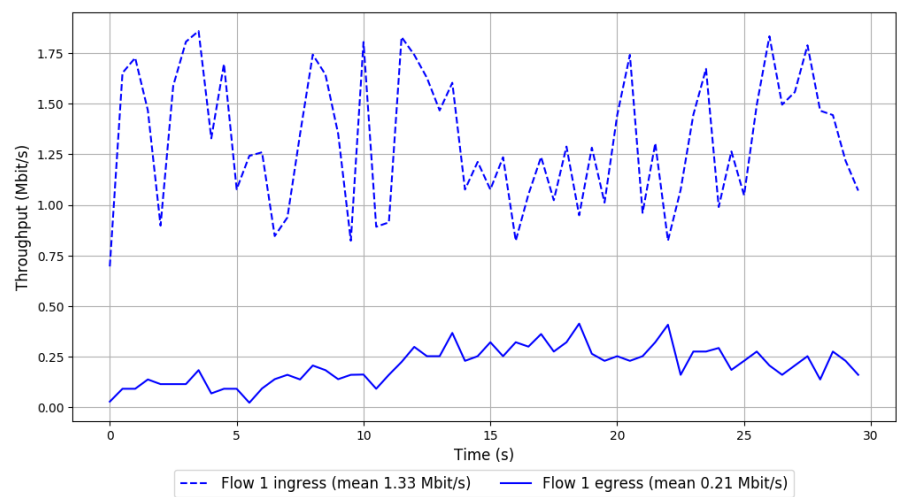


Run 2: Statistics of Vivace-latency

Start at: 2018-02-27 06:43:18
End at: 2018-02-27 06:43:48
Local clock offset: -3.009 ms
Remote clock offset: -69.033 ms

Below is generated by plot.py at 2018-02-27 08:06:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 540.798 ms
Loss rate: 84.19%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 540.798 ms
Loss rate: 84.19%

Run 2: Report of Vivace-latency — Data Link

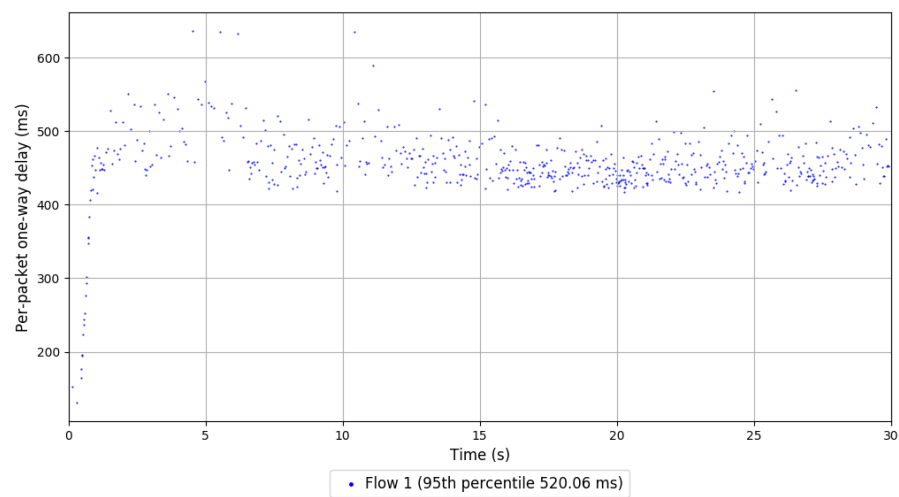
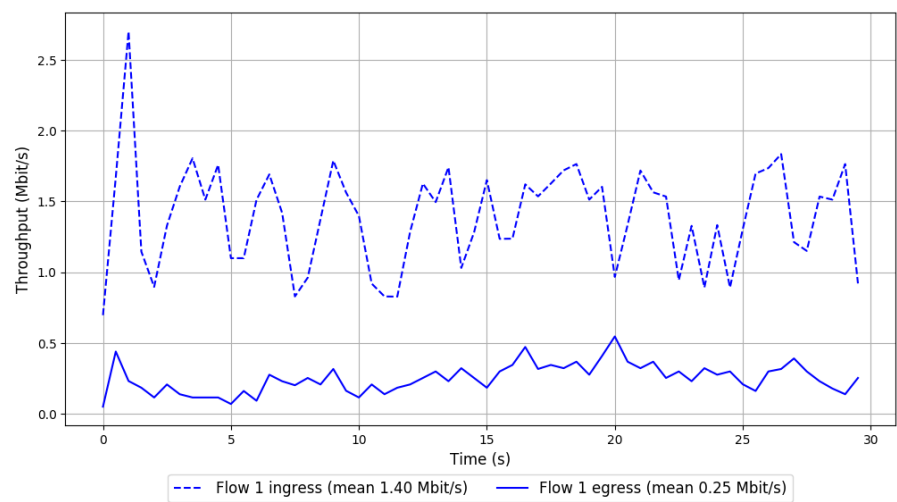


Run 3: Statistics of Vivace-latency

Start at: 2018-02-27 07:02:59
End at: 2018-02-27 07:03:29
Local clock offset: -6.738 ms
Remote clock offset: -76.345 ms

Below is generated by plot.py at 2018-02-27 08:06:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.25 Mbit/s
95th percentile per-packet one-way delay: 520.061 ms
Loss rate: 82.09%
-- Flow 1:
Average throughput: 0.25 Mbit/s
95th percentile per-packet one-way delay: 520.061 ms
Loss rate: 82.09%

Run 3: Report of Vivace-latency — Data Link

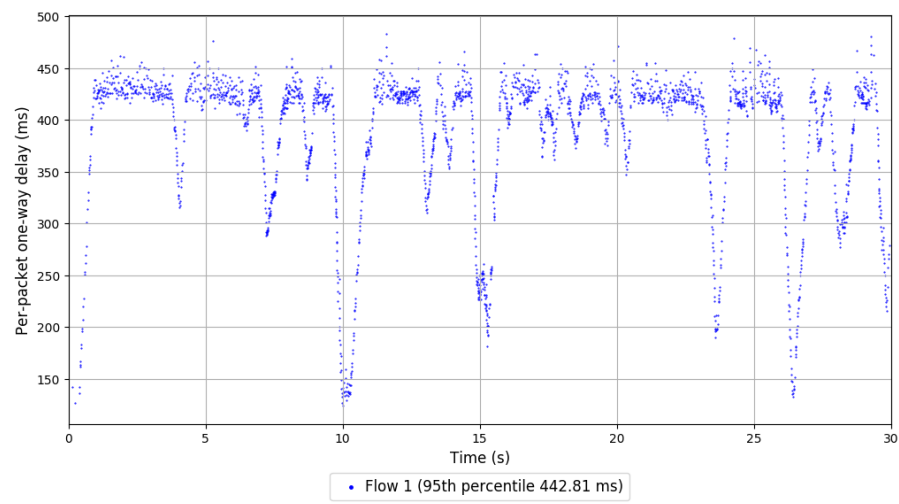
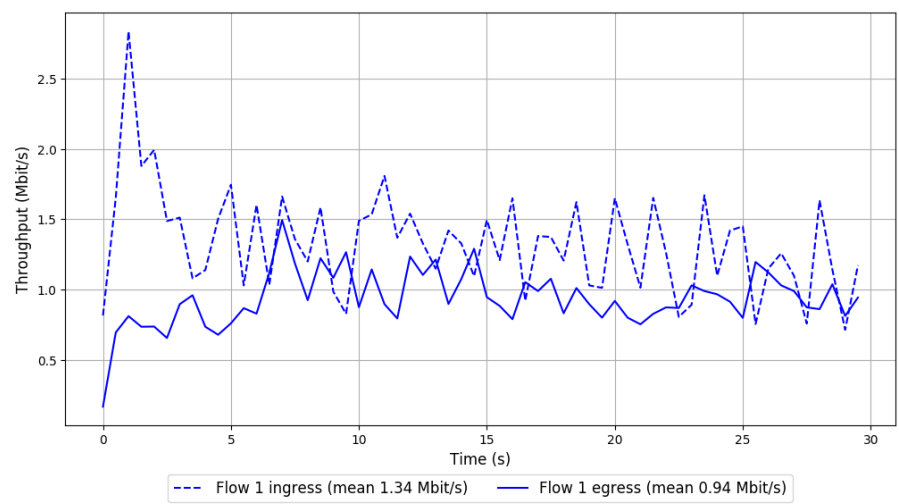


Run 1: Statistics of Vivace-loss

Start at: 2018-02-27 06:10:17
End at: 2018-02-27 06:10:47
Local clock offset: -2.272 ms
Remote clock offset: -70.537 ms

Below is generated by plot.py at 2018-02-27 08:06:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.94 Mbit/s
95th percentile per-packet one-way delay: 442.807 ms
Loss rate: 29.57%
-- Flow 1:
Average throughput: 0.94 Mbit/s
95th percentile per-packet one-way delay: 442.807 ms
Loss rate: 29.57%

Run 1: Report of Vivace-loss — Data Link



Run 2: Statistics of Vivace-loss

Start at: 2018-02-27 06:30:05

End at: 2018-02-27 06:30:35

Local clock offset: -1.54 ms

Remote clock offset: -70.717 ms

Below is generated by plot.py at 2018-02-27 08:06:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.66 Mbit/s

95th percentile per-packet one-way delay: 427.299 ms

Loss rate: 17.40%

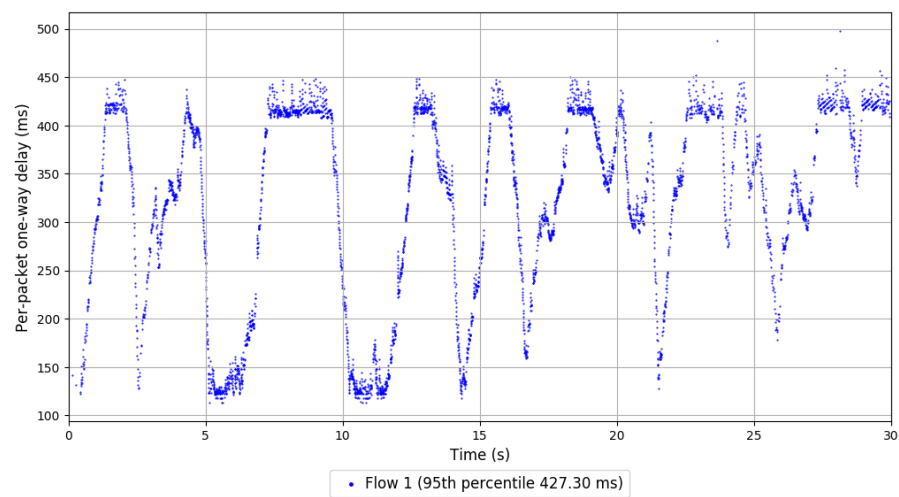
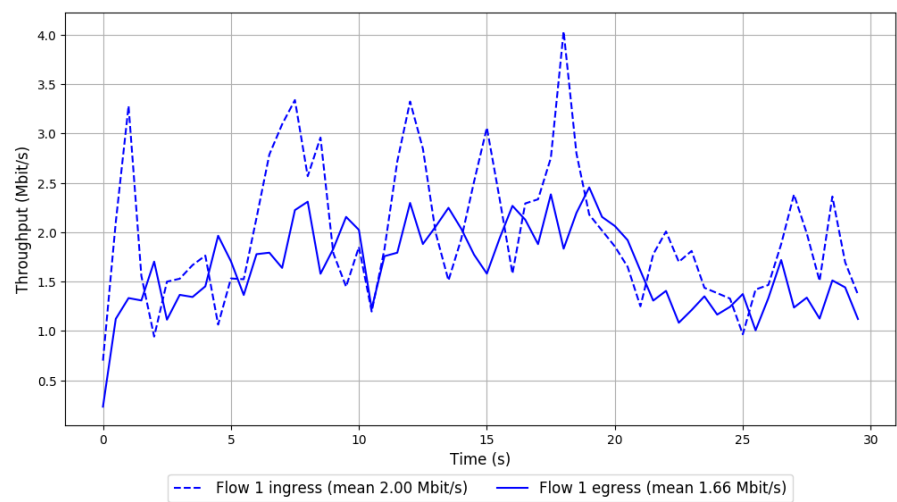
-- Flow 1:

Average throughput: 1.66 Mbit/s

95th percentile per-packet one-way delay: 427.299 ms

Loss rate: 17.40%

Run 2: Report of Vivace-loss — Data Link



Run 3: Statistics of Vivace-loss

Start at: 2018-02-27 06:49:51

End at: 2018-02-27 06:50:21

Local clock offset: -6.956 ms

Remote clock offset: -76.343 ms

Below is generated by plot.py at 2018-02-27 08:06:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.17 Mbit/s

95th percentile per-packet one-way delay: 574.144 ms

Loss rate: 87.10%

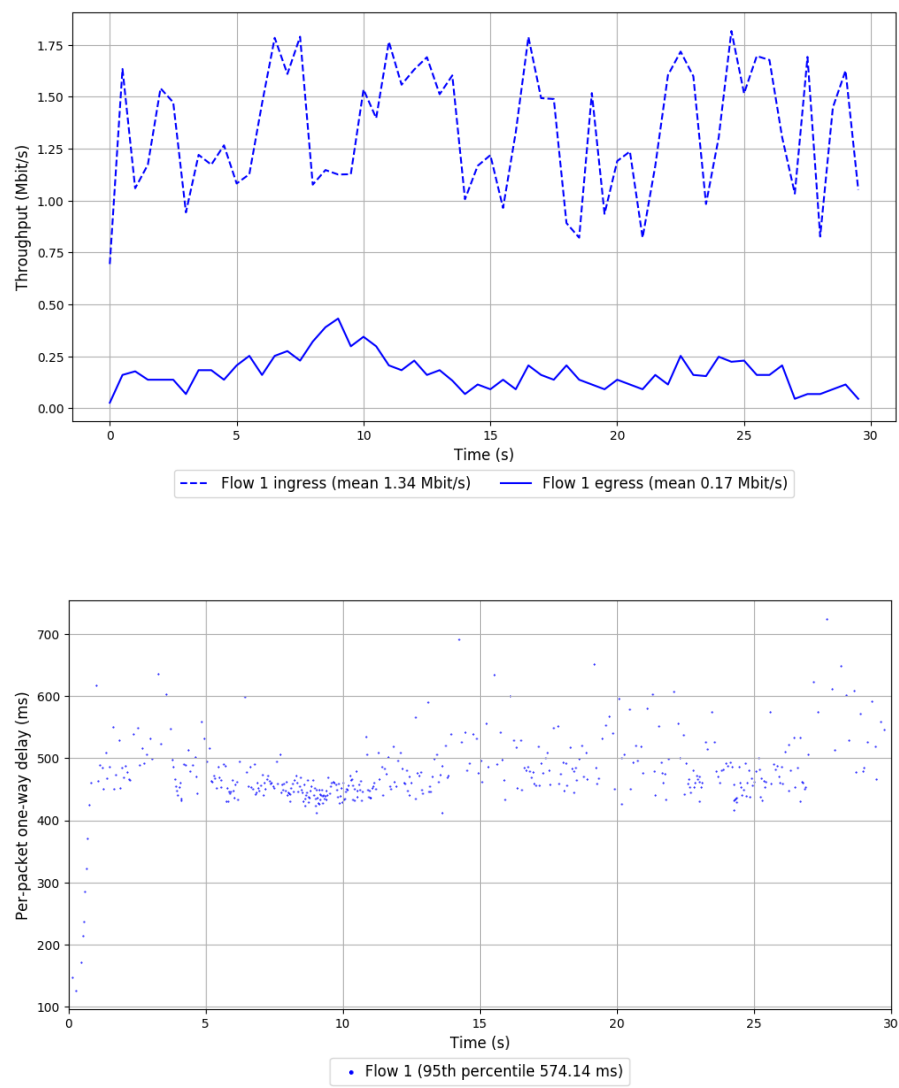
-- Flow 1:

Average throughput: 0.17 Mbit/s

95th percentile per-packet one-way delay: 574.144 ms

Loss rate: 87.10%

Run 3: Report of Vivace-loss — Data Link

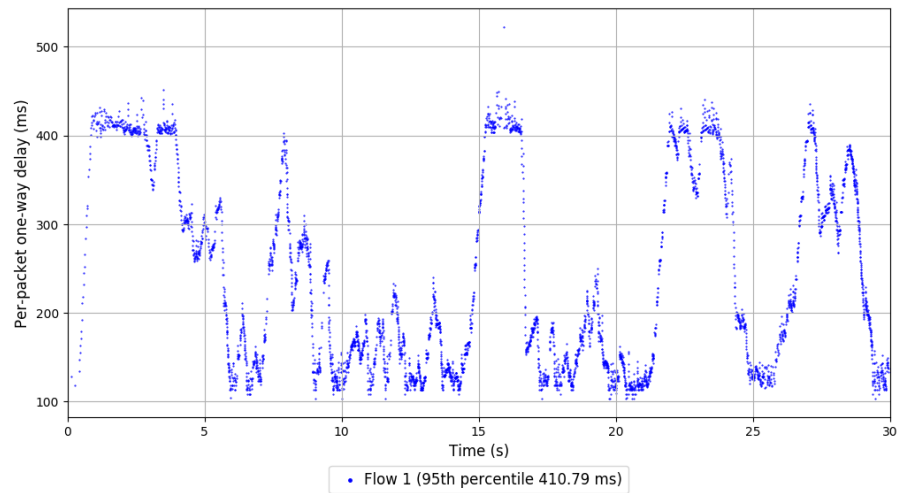
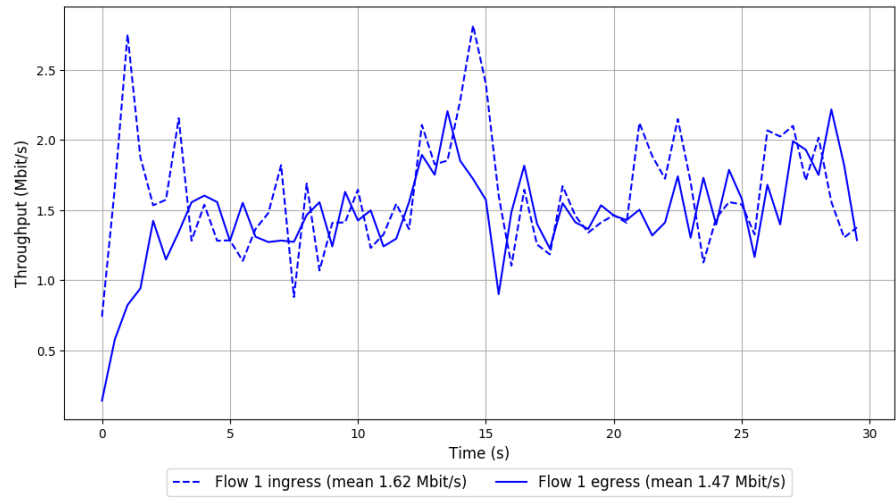


Run 1: Statistics of Vivace-LTE

Start at: 2018-02-27 06:16:54
End at: 2018-02-27 06:17:25
Local clock offset: -5.763 ms
Remote clock offset: -67.115 ms

Below is generated by plot.py at 2018-02-27 08:06:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.47 Mbit/s
95th percentile per-packet one-way delay: 410.794 ms
Loss rate: 9.34%
-- Flow 1:
Average throughput: 1.47 Mbit/s
95th percentile per-packet one-way delay: 410.794 ms
Loss rate: 9.34%

Run 1: Report of Vivace-LTE — Data Link

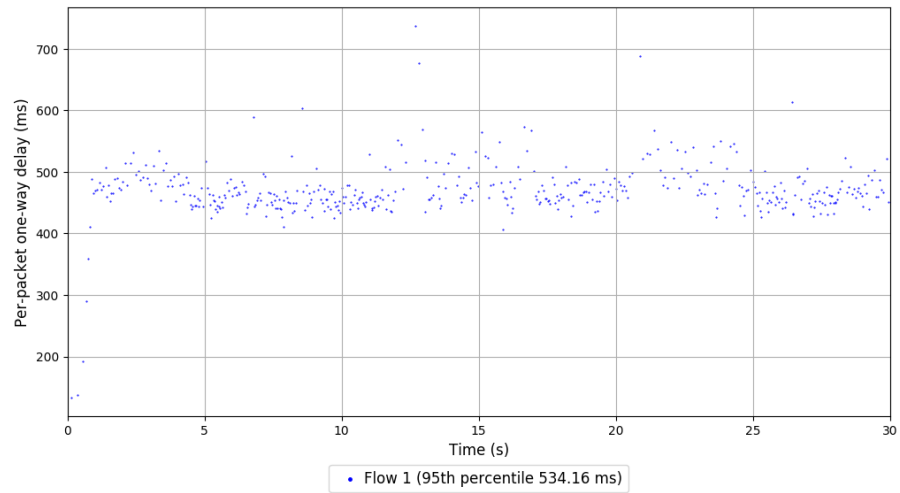
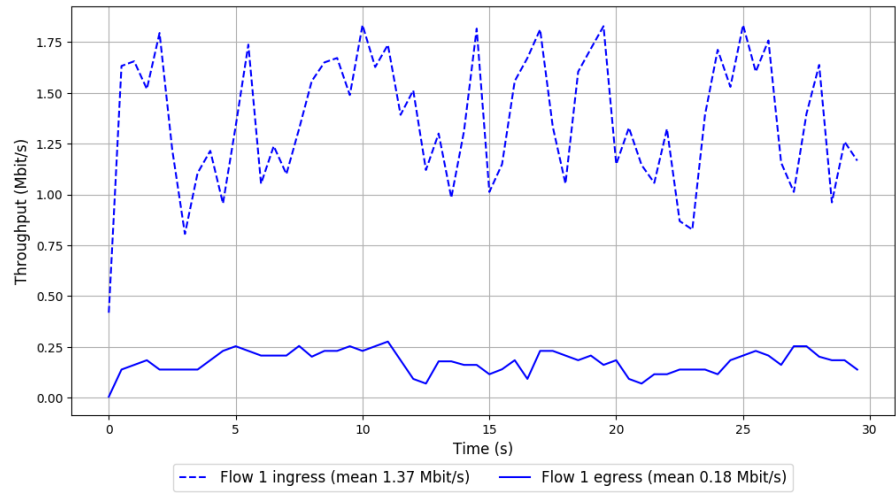


Run 2: Statistics of Vivace-LTE

Start at: 2018-02-27 06:36:42
End at: 2018-02-27 06:37:12
Local clock offset: -2.887 ms
Remote clock offset: -64.953 ms

Below is generated by plot.py at 2018-02-27 08:06:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 534.161 ms
Loss rate: 87.12%
-- Flow 1:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 534.161 ms
Loss rate: 87.12%

Run 2: Report of Vivace-LTE — Data Link



Run 3: Statistics of Vivace-LTE

Start at: 2018-02-27 06:56:27
End at: 2018-02-27 06:56:57
Local clock offset: -9.656 ms
Remote clock offset: -70.761 ms

Below is generated by plot.py at 2018-02-27 08:06:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.26 Mbit/s
95th percentile per-packet one-way delay: 507.103 ms
Loss rate: 81.28%
-- Flow 1:
Average throughput: 0.26 Mbit/s
95th percentile per-packet one-way delay: 507.103 ms
Loss rate: 81.28%

Run 3: Report of Vivace-LTE — Data Link

